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Differential Diagnosis of the Causes of Abdominal Distension in the Dog*

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I think this is my first appearance before this Society as an essayist, but very recently I opened a discussion at a meeting of the newly-formed Sussex Veterinary Society, the purport of which was largely the question of diagnosis. This subject is so tremendously important that it seems to me it cannot be discussed too frequently. In the comparatively small compass of a "paper" one can do little to elucidate the many diagnostic problems daily encountered; but it allows sufficient time to point out some of the pitfalls, and probably provides much food for cogitation. I have, in my spare moments of the last 18 months, been writing a book for the practitioner entitled "Clinical Diagnosis," and I can assure you that it is only when one gets down seriously to describing differential features, or estimating the significance of symptoms, that one realises what a difficult subject diagnosis can be.

We of the veterinary profession suffer from the great disability, not experienced by members of the sister profession, that diagnosis in the dumb animals depends almost entirely upon observation, and the opportunity for applying it. Occasionally some history of the case may be gleaned, but too often it is absent, and in any event it may be unreliable. This being so, we have to concentrate upon the observable symptoms, tabulating them carefully and remembering the various exciting causes of each one. By a process of elimination, one may possibly then arrive at a fairly accurate and timely conclusion. I well remember, as a young graduate, how hopeless some cases appeared to be with regard to their diagnosis; and to-day, after 25 years of practical experience, I sometimes find myself entirely at a loss to account for certain phenomena presented by my patients.

So many maladies are beset by the same train of symptoms, at least in the initial stages, that one may be pardoned for feeling confused and hesitant, especially when observation has not, as yet, become supported by long practical experience.

Reputations are built up on diagnostic ability, for once the *cause* is established, appropriate therapeusis can be ascertained and adopted.

Probably one of the commonest pitfalls is that associated with those diseases of which the outstanding symptom is persistent emesis. *Many* such cases of illness have been diagnosed as due to gastritis, but which, in fact, were due to abnormality or dysfunction of some distant organ. (An article appeared under my name in the *Veterinary Record* of February 15th, 1936, entitled "Emesis in the Dog and Cat.") Mange has been mistaken for eczema, hernia for ascites, and fractures for sprains. These errors are often errors of omission in consequence—most likely—of the practitioner devoting insufficient time and attention to the case, or of his not having adopted all the measures of elucidation known to present-day veterinary surgeons; or alternatively, through a failure to realise that the condition could have had another origin.

It is all very well to diagnose a complaint as ascites, or oedema, or albuminuria, etc., and to treat the animal by rule-of-thumb methods; but these are not diseases *per se*. They are only symptoms, and one really requires to know how they originate, so that, if possible, the *exciting* cause, as well as the effect, may be exposed and dealt with. Diagnosis would be aided by enumerating every possible cause of any particular malady. Thus reminded, the practitioner would be helped by a review of all the circumstances associated with the case, such as the history and accompanying symptoms. Such a review would recall every possibility to his mind, and by a process of elimination he would eventually feel able to determine a rational line of treatment.

It is obviously useless to administer antemetics and gastric sedatives for persistent vomiting when the cause is a foreign body in the bowel, or pus in the womb. It is equally useless to change the diet and apply soothing

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eczema ointment in a case of sarcoptic or follicular mange. And so one might continue indefinitely.

Let us consider now the subject title of this paper.

It is a common occurrence to be asked to diagnose the cause of a general distension of the abdomen. Many possibilities are opened up, and the examiner may have to give great thought and skill towards the elucidation of the particular case. The conditions which can give rise to it are ascites, ventral hernia, abscess formation, pregnancy, tumours, tympanites, pyometra, cystic distension, faecal accumulations, adipose tissue, hepatic and splenic enlargement, overloaded stomach, exudative peritonitis, and—in cats—hair balls, and in puppies, gross worm infestation.

It will at once be apparent that numerous possible causes have to be eliminated before one can arrive finally at a definite diagnosis. Much preliminary information will, however, be gained from the observation of the general condition of the animal, *i.e.*, whether very ill and perhaps feverish, or whether quite bright and lively and not at all disturbed by the abdominal enlargement. The ascertained history will indicate whether the condition was of sudden or of insidious occurrence, whether pain has been noticed, whether the swelling fluctuates or has been gradually increasing, and whether there is constipation and loss of appetite.

Ascites

Ascites usually gives rise to considerable distension of the abdomen, though mostly in its lower third, rendering it pendulous from the ribs to the groin. As a rule, the flanks are sunken and the animal is thin and depressed. With the dog in the standing position, one can distinguish the condition from other abdominal swellings by detecting the characteristic fluid "thrill" which crosses from one side of the abdomen to the other if one strikes the abdominal wall with the tips of the fingers. A tinkling or splashing noise may be heard with the stethoscope, though this is not constant. It is significant of ascites that to raise the dog's hind quarters in the air will cause immediate increased dyspnoea, in consequence of the suddenly increased weight of the gravitated fluid upon the diaphragm. Advanced ascites causes a degree of laboured respiration in any attitude.

Having suspected fluid, the practitioner confirms or negatives his opinion by paracentesis. The transudate of ascites is albuminous and generally colourless or pale amber and contains no fibrin to cause clotting unless the ascites is of inflammatory origin. It should be distinguished from the exudate of chronic peritonitis (such as tuberculous peritonitis), which is serofibrinous and may contain blood. Peritoneal exudate should be searched for tubercle bacilli, and the tuberculin test should be applied.

Ascites may be accompanied by intermittent vomiting, oedema and diarrhoea. If oedema of the limbs does, in fact, exist, it is very important to know that this will have developed *after* the ascites, when the latter was caused by portal obstruction; that it would have preceded the ascites in cases of heart or lung disease; and that in renal disease the two symptoms would have occurred simultaneously. Ascites arises from tuberculosis of one or other of the abdominal organs, heart disease, renal disease, and any factor which causes portal obstruction. Ascites with jaundice not infrequently denotes carcinoma of the liver.

Abdominal Hernia

With abdominal hernia, there is usually no evidence of fluid thrill or vibration caused by striking one side, and in the absence of such a phenomenon paracentesis must not be attempted until one has made a much closer examination. If there is a history of injury or accident, then hernia must be suspected; its onset would be sudden, but it would not be inflammatory or painful; there would be no dyspnoea; but the swelling might be easily reducible by careful manipulation. By turning the dog on its back, the swelling may at once disappear, and the rent in the abdominal walls should be detectable.

On the other hand, a neglected hernia may already have become irreducible through adhesions of the contents with the hernial pouch, or of loops of intestine with each other. Frequently, then, the hernia is strangulated and gives rise to pain upon pressure; the covering skin is tense, hot and red, the animal vomits persistently, and the swelling is irreducible. The temperature has no real diagnostic value, though with a strangulated hernia and much inflammation it is likely to be about 104°. An exploratory incision through the skin would determine the existence or otherwise of ventral hernia.

Pregnancy

Pregnancy may cause enormous or only slight distension of the abdomen, according to the number and size of the foetuses, and to the lapse of time since service. These should not present much difficulty in detection, for in the majority of cases one can ascertain the presence of a foetus (after about the sixth week of gestation) by palpation through the abdominal wall. It is sometimes possible to detect foetuses much earlier than that. Small bodies which are thought to be foetuses may, in fact, be faecal matter, and one should take the precaution of giving an enema and a purge after the first examination, and then palpate again. In the

case of large dogs or those with gross abdomens, in which there is no possibility of the fingers meeting, it is usually impossible to detect anything by palpation. With difficult patients it is often advisable to administer a narcotic such as nembutal to facilitate examination. Digital examination *per vaginam* may reveal what is being sought. In the later stages of gestation, *i.e.*, from about the fifty-sixth day, good X-ray photographs would demonstrate the foetal skeletons.

The pregnant bitch or queen would probably be perpetually hungry and would usually appear well nourished, in contradistinction with ascites. Moreover, in pregnancy there is no dyspnoea as occurs in ascites, and there should be some history of service, or of having escaped at the last oestral period. If the abdomen is distended in consequence of advanced pregnancy, one should look for enlargement of the vulva, and of the mammae.

Pyometra

Pus in the womb causes, in some instances, an appreciable enlargement of the abdomen, and is characterised by pain on pressure; absence of resonance or of fluid "quiver"; a purulent discharge (in most cases) from the vulva; fast, thready pulse; sickness, high temperature, which at a later period may become subnormal, and increased respirations. It will be seen that the symptoms of this condition, as described on paper, resemble somewhat those of intestinal obstruction, except that in the latter no vaginal discharge occurs and the temperature is usually little elevated. At the same time, pyometra also may exist in the absence of vaginal discharge, and diagnosis may not then be quite so simple.

But there is a somewhat characteristic tucked-up, droop-eared, hang-dog appearance in the intestinal case; and in the uterine case it should usually be possible to feel the enlarged uterus after the muscular resistance of the abdominal wall has been overcome.

Obscure cases should be radiographed, for pus often shows up well in a radiograph.

Considerable difficulty might be experienced in distinguishing between chronic purulent metritis and cancer of the womb. In both diseases we may find a foetid, blood-stained vulvar discharge, with progressive emaciation of the animal. But in metritis there has usually been a rise of temperature, not observed in insidious malignant growth, though as metritis becomes chronic the temperature tends to fall. In metritis the vulva may be swollen and inflamed, whereas in uterine cancer such would not be observed. Tenderness of the abdomen and anorexia are usually present in metritis, and after the acute symptoms have abated there is a tendency to resolution. With malignant disease the symptoms are slowly progressive, the animal anaemic, emaciated, and generally over six years of age. So far as age is concerned, however, we have to remember that senile endometritis is not uncommon in bitches and queens. Metritis is commonly associated with a history of parturition or dystokia some little time previously. It may occur in bitches which have never been mated. If from an exhaustive examination of the animal the practitioner is still unable to arrive at a diagnosis, an exploratory laparotomy will decide the case. It is best to avoid the use of morphia as the pre-narcotising agent on account of its ill-effect in septic conditions.

Tumours

The abdominal cavity may accommodate various types of neoplasm in or upon one or other of the abdominal organs, causing swelling in proportion to the size of the new growth. Fibromata or carcinomata have been observed in the womb, occasionally large enough to increase the size of the abdomen. As already stated, with cancer of the uterus there would most likely be a foul vaginal discharge, occasionally blood-stained, and the animal would show a progressive emaciation. In many instances radiography reveals the presence of growths, and they might—in suitable subjects—be felt as hard bodies through the abdominal wall. In order to obtain the flaccidity of the abdominal muscles necessary for thorough palpation, it is advisable to narcotise the animal.

Hepatic Enlargement

Hypertrophy, hyperaemia, or neoplasm of the liver must not be overlooked as possible causes of abdominal distension, but, although cancer of the liver is occasionally met with, it is rare for any enlargement of this organ to be appreciated externally. It would be found, if at all, on the right side. In hyperaemia, the liver is greatly enlarged, and as it arises in consequence of a number of conditions, it is likely to be the commonest affection of this organ. Such causes are cardiac-muscular weakness, valvular disease, pneumonia, pleurisy with effusion, and some others. Unless the resulting abdominal distension is marked, one might have great difficulty in diagnosing hepatic involvement except from the clue that pressure over the region of the liver causes pain, that there might be some slight jaundice, and that not infrequently ascites is an accompaniment.

Splenic Enlargement

The spleen is not rarely the seat of considerable enlargement, and I once removed a Labrador's spleen, which weighed over 6 lb. and caused great abdominal distension. In such cases, however, the abdomen shows an enlargement definitely greater upon, or actually confined to, the *left* hypochondriac region. There

seem to be no recognisable symptoms associated with splenic enlargement which would assist in a diagnosis. Even upon palpation detection would be very difficult in large or fat animals, though quite possible in those which are small and thin. As the spleen is in contact with the last two intercostal spaces on the left side, percussion should be carried out in that position, and enlargement might be detected by an extension of the dull area.

But, as in the case of percussion of the liver (lower third of the eighth, ninth and tenth ribs on right side, and twelfth rib on left), so with percussion of the spleen—the results are far too indefinite and not to be relied upon.

Tympanites

Distension of the abdomen by gas is not really common among dogs, but when it occurs it is to be distinguished from ascites by the hollow sound produced on percussion of the abdomen; by not disappearing when the animal is placed on its back; by some additional evidence of constipation or indigestion; by the passage of flatus; by the comparatively sudden appearance of the condition, and by the absence of sunken flanks and of the quiver which can be sent through ascitic fluid. The abdomen is uniformly enlarged and drum-like and (as in ascites) dyspnoea is occasioned. Sharp attacks of pain also may be observed in tympany, but these suddenly abate; and the whole condition may at once be relieved by passing a rubber flatus tube high into the intestines, or *per os* into the stomach.

Faecal Accumulations

Obstipation and constipation sometimes result in such a great accumulation of faecal matter that abdominal distension ensues. There is a history of no motions having been passed for some time, and one is able to appreciate that the intestines are loaded. There is no resonance or tympany of gas, no fluctuation or quiver of fluid, no temperature, no vaginal discharge, no bladder enlargement, and no disappearance of the swelling when the dog is on its back, as would occur in ascites and ventral hernia. An enema would probably help the diagnosis at once. One is, perhaps, apt to think that there should be no trouble whatever in ascertaining that the case is merely one of obstructed bowel, but many practitioners will probably be able to recall cases of difficulty. The dog is very dull, refuses food, often has a great thirst, the abdomen may be very tender, vomiting is a prominent symptom and the dejecta may contain faecal matter. By abdominal palpation one may certainly feel hard objects, thought to be faecal accumulation; but these could also be foetuses, and care is needed to distinguish between the two. In pregnancy, however, there is not the severe vomiting, the pain on palpation, the lack of appetite and spirit, nor the history of acute constipation. Other distinguishing features have already been mentioned under the heading of pregnancy.

Dilated Bladder

The bladder is, when contracted, normally situated in the pelvic cavity, but when greatly distended it protrudes well into the abdominal cavity, causing distension thereof. By palpation through the abdominal wall one will have no difficulty in detecting the spherical and usually very hard bladder. Pressure upon it causes pain and grunting, the animal assuming an attitude of micturition. One is prompted to examine the bladder when the history of the case tells of frequent attempts at micturition, the small amounts of urine passed being often blood-stained; a history also of great restlessness, straining, and refusal to feed. The condition is most commonly encountered among male cats (entire or castrated) and is due usually to obstruction of the penial urethra by sabulous deposits. In dogs it may be caused by calculi or by enlarged prostate. Abdominal distension as arising from dilated bladder is more noticeable in cats than in dogs, and in the former species typical symptoms are frequently not shown. In other words, cats so affected are apt to adopt their usual attitude when ill, namely, to sit motionless with head down and seemingly oblivious to their surroundings. On very rare occasions an increased periphery of the abdomen might be due to accumulations of urine which have escaped through a rupture of the bladder.

After two or three days of unrelieved distension of the bladder, this accident might occur, and the symptoms would be: Rapidly developing dullness or coma, sudden departure of pain, trembling, faint and rapid pulse, and an inability on the part of the surgeon to detect the outline of the bladder. Catheterisation produces no urine, though the latter would be obtained by paracentesis abdominis. The fluid "thrill" would be obtained on percussion of the abdomen. Convulsions finally set in and the animal dies within a few hours of the occurrence of the rupture.

Adipose Tissue

When there are great quantities of adipose tissue, probably in addition to an abnormally fat-laden omentum, abdominal enlargement may be excessive, but there are no pathological symptoms and the increase in size will have taken a considerable time to become established. There may, however, be manifested some loss of breath at exercise, though this is due mostly to fatty infiltration of the heart.

Among cats, those which are fed habitually upon cooked cod's head put on fat very rapidly and particularly in the abdominal wall. Large deposits of supra-mammary adipose tissue will

cause the mammae to hang low and prominently. The abdomen does not become *pendulous* when enlarged by collections of fat, and its shape or appearance does not alter whether the animal is standing on four legs, on two legs, or is lying down.

Hair Balls

Concretions of hair are sometimes formed in the bowels of long-haired cats, and may reach such proportions as to cause abdominal distension, if not from their own size, then from the resulting faecal impaction, and possibly flatulence. Paraffin by mouth and rectal enemas may solve this problem. Diagnosis is also certain by means of radiography after the administration of an opaque meal. The latter penetrates amongst the hair and remains there to reveal the "hair ball" long after the rest of the meal has been passed out.

Overloaded Stomach

An excessively full stomach is a factor not to be overlooked when an animal (especially a puppy) is brought to one's notice suffering from colic, distension, and other signs of indigestion. I have known clients to become very alarmed at the condition of their animals when so affected, and certainly the patients, in such cases, present a very distressed appearance. Little puppies *always* distend greatly after a meal; but there are some instances of gluttony met with in which the consequences *do* seem alarming at the time. When this condition is suspected a simple emetic would soon evacuate the contents and confirm the diagnosis.

Exudative Peritonitis

In this disorder considerable quantities of fluid may collect in the abdominal cavity, and a consideration of the symptoms accompanying ruptured bladder will serve to distinguish it from that condition. It is very difficult, however, to differentiate between a collection of peritoneal inflammatory exudate and of ascitic transudate, unless the fluid is aspirated and examined. The distinguishing features have been mentioned earlier in this paper, under the heading of ascites.

Generally, when peritonitis is the cause, there is pain on pressure of the abdomen, vomiting, and a rapid, wiry pulse.

Worms

It is not rare for puppies to be so impacted with worms that the animals take on a decidedly pot-bellied appearance, which circumstance, together with a voracious appetite, probably some anal irritation, general restlessness, and the youth of the animal, would lead one to suspect worm infestation. Faeces should be examined macroscopically for parasites, and microscopically for eggs. A vermifuge would generally settle any doubt and at the same time relieve the condition.

Sheather's sugar flotation method is recommended for the detection of worm eggs, and, incidentally, also of coccidia.

So far as I can remember, the above conditions are the only ones likely to cause a more or less general distension of the abdomen, as distinct from the localised swellings arising from umbilical or inguinal herniae, abscesses and cysts. They form a formidable list, and the practitioner who can unerringly make a differential diagnosis is the one who will earn the faith of his clients and the admiration of his colleagues.

(*For Diagnostic Table in Abdominal Distension see pages* 612 *and* 613.

Discussion

Invited by the Chairman (Major F. J. Taylor) to open the discussion, Mr. John Facer said it was his privilege to be the first that afternoon to thank Major Kirk for coming and reading such an excellent paper. It was well written and concise and should provoke a good discussion from which many of them could learn something. He thought that anyone who wrote and delivered a paper deserved great credit for his generosity and courage.

"The paper," Mr. Facer continued, "has been fully worked out and leads one's thoughts to many and varied conditions about which innumerable questions might be asked. It is only fair to the essayist, however, to bear the title strictly in mind and I will try to do so and not wander off the set track. I was pleased to read in the early paragraphs of the paper that one really requires to know how these diseases originate and to find the exciting causes. I thought that we should be told some of these causes later on, but perhaps they do not come strictly under the heading and so I cannot say to Major Kirk, 'Where are they?'

"Ease of diagnosis, to my mind, varies in direct ratio to the length of time the disease has been in existence. Usually one gets these cases in the last stages, with a very emaciated skeleton and dropped abdominal wall. No resistance is then made to palpation, and, with a fairly clear mental picture of the anatomy, one can pick out the offending organ. Usually, again, very little can then be done. I am not sure that one could say very much in the early stages of, say, hyperaemia of the liver. One might be able to assert that the liver was enlarged but the cause would remain a mystery. I call to mind a recent case. I arrived to find the patient lying on her stomach, dead. The abdomen was enlarged and there was slight bleeding from the nostrils. *Post-mortem* showed hyperaemia of the liver with a considerable amount of dropsical fluid in the abdomen, but not sufficient, I imagine, to have caused distress. I could find no other

DIAGNOSTIC TABLE IN

Disease.	Pain.	Percussion.	Palpation.	Temperature.	Vomiting.	Appetite.
Ascites... ...	Nil	Fluid thrill and dull note	Distension	Normal or even sub-normal	Intermittent	Fair
Ventral Hernia	Nil	Rather tympanitic; Peristalsis on auscultation	May detect rent in abdominal tunic	Normal	Generally nil	Good
Ditto, strangulated	May be intense	Dull note	Area hot and swelling irreducible	Elevated	Persistent	Nil
Pregnancy ...	Nil	Dull note	Foetus may be felt after 25th day	Normal	Occasional	Very good
Pyometra ...	Abdominal tenderness	Absence of resonance or fluid thrill	Enlarged uterus may be felt	May be high	Persistent	Varied
Cancer of Womb	Gnawing and continuous	Normal	Not detected unless large	Normal to subnormal	Frequent	At first good, then declines
Other Tumours	Depends on position and nature of growth	Very dull note	Detected if sufficiently formed	Usually normal	Not a constant feature	Probably normal
Tympanites ...	Pain and discomfort	Hollow resonance	Generally not possible	Normal	Nil	Temporary loss
Dilated Bladder	When bladder pressed; Straining	—	Spherical hard body felt in front of pubic rim	Slightly elevated	Frequent	Temporary loss
Adipose Tissue	Nil	Dull	Abdomen distended	Normal	Nil	Good
Faecal accumulations	Abdomen tender, may be colic	No resonance or fluctuation, sounds very dull	Faecal masses felt. Distinguish from foetuses	Normal	Frequent & may contain faecal matter	Nil
Hair-ball (in cats)	Nil, but some discomfort	Dull	Almost impossible to distinguish	Normal	Occasional vomit may contain hair	In abeyance
Worms in excess	Nil	—	—	Normal	Round worms may cause occasional emesis	Ravenous or capricious

ABDOMINAL DISTENSION

Dyspnoea.	Discharges.	Faeces.	Body Condition.	Diagnosis.
Often extreme	Nil	Usually diarrhoea	Poor	Raising hind quarters increases dyspnoea. Oedema often present. Abdomen pendulous. Fluid thrill on percussion. Disappears with dog on back. Onset slow. Paracentesis.
Nil	Nil	Normal	Normal	Onset sudden. May disappear with dog on back. Palpate rent in abdominal tunic. Exploratory incision.
Slight	Nil	Bowel probably obstructed	Normal	Skin over swelling hot, red and tender. Swelling remains when dog turned on back. Exploratory incision.
Nil	Only after appearance of foetal membranes	Often constipated	Usually good	Foetal movement. Auscultate foetal heart. History of oestrum or service. Palpation through abdominal wall. Examination *per vaginam*. X-radiography. Mammary and vulvar enlargement.
Respirations increased	Purulent vaginal discharge but this not constant	Tendency to constipation	All stages from good to poor	Vulva may be swollen and inflamed. Purulent vaginal discharge. Palpation through abdominal wall. X-radiography after 50th day.
Nil	Blood-stained from vagina or even pure blood	Tendency to diarrhoea	Progressive emaciation	Animals mostly over 6 years. Examination of blood films. Exploratory laparotomy. Vaginal discharges—foul. Insidious onset. Palpation. X-radiography. Wasting of body.
Generally nil	Depends upon organ attacked	Often diarrhoea, but not necessarily	Malignant growths cause emaciation	If affecting liver, swelling on right side. If the spleen—on left side or ventral. Palpation. X-radiography. Exploratory laparotomy.
Considerable	Nil	Usually constipated	Normal	No disappearance with dog on back. Rather sudden onset. Resonance on percussion. By passage of flatus tube. Dyspnoea.
Nil	Urine blood-stained	Normal	Normal	History of anuria. Bladder felt by palpation. Haematuria. Strangury. Passage of Catheter.* Paracentesis vesicalis. Fluid quiver if bladder ruptured.
Slight upon exercise	Nil	Normal	Very good or gross	Loss of breath with fatty heart. Abdomen uniformly round. Absence of pathological symptoms. No alteration of shape whatever position animal assumes. Very slow onset.
Nil unless accompanied by tympany	Nil	History of constipation, or obstruction	Normal	No alteration of shape in any position. Enema. Palpation of faecal masses.
Generally nil, unless accompanied by tympany	Nil	Constipation or obstruction	Normal	X-radiography some hours after an opaque meal. Hair in faeces extracted by enema. Hair in vomit.
Nil	Nil	Often diarrhoeic and may be bloodstained	Poor, although abdomen rotund	Parasites or segments in motions. Eggs found microscopically. Pruritus ani. Great appetite. Vermifuge.

lesion. What would Major Kirk suggest as the possible cause of this and what treatment might have been adopted had one seen the animal alive and been able to diagnose enlargement of the liver? I confess to a feeling of relief after the *post-mortem*, as I felt I should not have been able to make a correct diagnosis and even had I done that, I should have been at a loss to know what treatment to adopt.

"The spleen is rather an intriguing organ and is very often at fault in enlargement of the abdomen. It can assume enormous proportions and various shapes. I have seen it bent over on itself, thus causing what felt like a ball or rounded tumour. Can this organ be removed with impunity, or is it necessary after removal, to give spleen extract to keep the animal in a state of balanced metabolism? Disease of the spleen rarely exists by itself and one finds similar or other lesions in the viscera where the spleen is affected, so that its removal does not take away all the trouble.

"Major Kirk tells us to examine the peritoneal fluid of ascites for tubercle bacilli. I doubt if the bacilli are found free in this fluid; if they are, however, surely the case must be a very advanced one and, therefore, much other evidence of the existence of tuberculosis would be discovered and this would obviate any need of trying to find the bacillus. In any case, tuberculous peritonitis must be very rare. I do not think that Major Kirk intends to imply from his remarks that it exists as a disease *per se*. What tuberculin does Major Kirk use to test a dog?

Major Kirk's list is nearly complete, but there are one or two conditions apart from variations of those mentioned, which I think might have been included in the paper. Haemorrhage is one and is not uncommon. It may be due to the rupture of a lesion in one of the organs or to rupture of an organ itself by mechanical violence. The other condition is hydrops amnii which, although not perhaps frequently seen, yet is a condition which occurs from time to time. Can Major Kirk give any explanation of the cause and can it be prevented or treated other than by operation?

"One condition mentioned and given in the list is ventral hernia. Should it be included? It cannot be said to cause abdominal enlargement.

"I must mention pregnancy, with special reference to super- or over-distension of the abdomen. I refer to those cases in which a bitch has been mated to a much larger dog than herself and is literally full of puppies, showing during the later stages much distress in breathing and lying down. What procedure is best in such cases? The owner usually wants something done to relieve the distress, which is very real. Major Kirk says there is no dyspnoea in pregnancy. He should, I think, qualify that statement.

"The essayist uses X-rays for the detection of foetuses. Does he use radiography for the diagnosis of pyometra and, if so, with what success? I remember an article in the *Veterinary Record* in which the *modus operandi* was described. The method is to inject an opaque substance, bismuth, into the colon and to ascertain by X-rays its relative position. I should like to have my mind refreshed on this point.

"I will content myself with these few remarks, as I expect all present wish to contribute to the discussion. I must remind Major Kirk that it is not the first time he has addressed us. My memory must be better than his, as I remember he talked to us at Bournemouth on distemper a few years ago. Anyhow, we hope this will not be his last effort on our behalf and again I offer him our best thanks for coming along. I might go so far as to suggest that the title of his next paper be 'Treatment of abdominal distension in the dog.'"

Mr. J. B. White, having thanked the essayist, said that Major Kirk had mentioned the use of nembutal for producing narcosis or light anaesthesia to facilitate abdominal palpation and examination. For anything less than complete anaesthesia he (the speaker) had found nembutal rather uncertain in action, and prone to cause excitement in quite a proportion of cases.

Mr. C. Warnock Begg remarked that he used to conduct quite a large dog practice and he thought the paper they had heard was a masterly one. Major Hamilton Kirk's description of the symptoms of the various conditions was of a very detailed character and he would suggest to the less experienced practitioners that they should have his paper in their surgery so that they could always refer to it.

Mr. B. Gorton, commenting on the difficulty of diagnosis, remarked that when he was a graduate he thought he could diagnose almost anything, but now he realised he could not diagnose anything with certainty, while Mr. W. F. Maynard, speaking in similar vein, observed: "I know how difficult it is to decide these cases, and I have made up my mind that I always shall find it difficult."

Mr. H. C. Rockett observed, with regard to the use of X-ray in the detection of growths, that he believed there were some growths they could detect by this means, but there were certainly as many the presence of which they could not ascertain. If they had a patient in which the X-ray showed no growth, were they not apt to go astray if they assumed there were none there?

Major Stewart Wood said he could only express his admiration for the paper. There was nothing he could disagree with and he was afraid he could not add much to the discussion except to recall one or two cases he had seen.

The subject of the first case was a fox-terrier dog, the property of a ladies' hairdresser. It was very emaciated, with a hard distended abdomen. An exploratory operation showed that a mass of human hair, weighing twelve ounces, completely filled the dog's stomach and duodenum. The hair was removed without difficulty and the dog made a good recovery.

The second animal was a Pug bitch, aged

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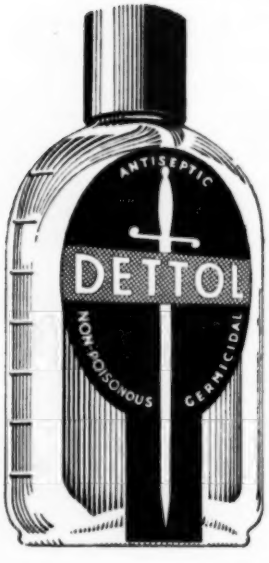

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16 years, distended and in pain; it was found to have pyometra. As the owner wished it, he removed the uterus. The dog lived six months, and he questioned whether they were justified in operating on aged animals.

Captain W. K. Townson was glad to have had the opportunity of listening to such an interesting and instructive paper and said the only question he would like to put to Major Kirk was whether he associated enlargement of the spleen with the enlargement of the abdomen due to Hodgkin's disease. In one case of distension he thought it was due to the latter condition, but had found on making a *post-mortem* a very much enlarged spleen and also a spleen considerably out of its normal position.

Mr. H. S. Caldwell said that he had met with a condition which had not been mentioned there as a cause of abdominal distension. It occurred in young dogs and was caused by a streptothrix. There was marked enlargement of the mesenteric glands and a small amount of ascitic fluid containing large white flocculi was observed.

The Chairman (Mr. F. J. Taylor), in a concluding contribution to the discussion, said he wished to thank Major Hamilton Kirk for his very excellent and exhaustive paper, which he was sure would be of great use to all of them. He was very pleased to hear that the essayist was writing a book and he was hoping it would be on "Canine Medicine." Diagnosis was the most important part of the whole scheme of curative treatment, and it required long experience and very acute powers of observation and deduction, but he thought the training the students were getting at the Colleges to-day was going to help them a great deal to form a correct diagnosis of most complaints. It should also be borne in mind by the lay public how very valuable and essential the art of diagnosis was. Many people went to cheap clinics, and places where inexperienced people carried out this work, with little training or experience to enable them to diagnose even the most elementary diseases. He failed to see how anyone could treat a disease until they could tell what the disease was and the probable cause. They might get cheap advice at these clinics, but in many cases they did not get correct or beneficial treatment, and it was unjust to the animal patient.

With regard to distension from gastritis, had Major Kirk ever seen a case of aconite poisoning? Also, would he tell them the best method of using a catheter on a cat? With regard to diagnosis of jaundice his advice was not to try to do it by electric light, because one could not see the discoloration of the mucous membrane by this light.

He would like to know how Major Kirk tested dogs and cats for tuberculosis and if his testing was 100 per cent. reliable; in his experience it was disappointing. He would be grateful for information as to the brand of tuberculin used and the quantity injected.

The Reply

Major Kirk, replying to the points raised in the discussion, said that their Chairman's reference to the mal-diagnosis of quacks reminded him forcibly of the worst example of this which he had ever known. The previous week a terrier was brought to him because it could not eat. It had first been to an animal hospital run by such people, where they had diagnosed meningitis and advised destruction. There was not a vestige of evidence of meningitis, but an examination of the throat revealed cancer of the pharynx.

The diagnostic methods of medical specialists always impressed him. They made searching enquiry into the history of the case before even touching the patient. Then a routine examination was made, and every item so elicited, either by conversation or observation, was committed to paper. After the patient's departure, the clinician could go over at leisure what he had written, consider all the possibilities, and by a process of elimination, was greatly helped in forming a diagnosis. He fancied that veterinary surgeons very rarely took this trouble; but he felt that their decisions would be more accurate if they did.

Major Facer took him to task for not giving the causes of all the conditions mentioned in his paper. To have done so would have been to trespass outside the limits of his subject which was essentially "differential-diagnosis," and rigidly excluded aetiology and treatment.

He was asked to give a lightning diagnosis (a dangerous procedure) of a case presented to Major Facer, in which a dog was found to contain peritoneal fluid, and was bleeding from the nose. With such limited information he could only hazard a guess that there was portal obstruction arising either from disease within or without the liver. The diseases within the liver might have been cancer or cirrhosis, and those outside could have been tumour of the stomach, duodenum or pancreas, etc. Haemorrhage was not uncommon in cases of portal obstruction, and in dogs it was usually from the anus.

Major Facer was apparently sceptical that tubercle bacilli would be discoverable in peritoneal fluid, arising from that disease, but he could assure him that microscopical search of such fluid, after centrifuging, would frequently reveal the acid-fast bacilli, though not necessarily in large numbers. It was a recognised method of diagnosis, and in addition, he had recommended the tuberculin test.

Apropos of the latter, Major Facer enquired what kind of tuberculin was used for dogs. When ordering it he stated the animal upon which it is to be used and the route of administration. He presumed it was what was known as the old English tuberculin, of bovine origin, but, of course, for the ophthalmic test it contained no carbolic acid.

The opener also enquired as to the treatment of hydrops amnii. If this rare condition had been definitely diagnosed, he thought probably that laparotomy would be the soundest method of combating it.

He (the opener) told them that ventral hernia did not cause abdominal enlargement, but he begged leave to say that if the abdomen might be regarded as all that was contained within the confines of the skin, then ventral hernia might be a cause of greater enlargement than any other known condition.

Major Facer had said also that, contrary to what he (Major Kirk) stated in his paper, there might be dyspnoea in pregnancy. He conceded that in abnormal cases of pregnancy in which there might be an excessive number of foetuses, hydrops, oedema, or some other condition causing extra pressure upon the diaphragm, there might be dyspnoea. But in his paper, he was naturally describing the factors observable in a *normal* case of pregnancy, in which he still said there was no dyspnoea.

As to whether radiography would be valuable in diagnosing pyometra, he could affirm that pus very often was clearly delineated in a radiograph. He had X-rayed several dogs because

of unaccountable lameness or deep-seated pain, and found smoky areas on the films which proved the presence and revealed the limits of collections of pus. But apart from that, in cases of pyometra the *os* would usually be open, and a solution of sodium iodide could be injected into the womb. This, being radiopaque, would serve to outline the womb and show whether it was enlarged or not.

In reply to Mr. Rockett, who asked whether tumours could be diagnosed by X-rays, he would say that many could be seen by this means, though much depended upon the nature and structure of the growth so far as its permeability by light was concerned. But the presence of growths could be strongly suspected, in numerous instances, because of the displacement of other organs which was so often occasioned. He had seen radiographs of tumours in the chest which had caused collapse of the lung—the whole state of affairs being most clearly defined. Tumours of the oesophagus or of the bowel, would usually be betrayed if radiography was carried out after administering an opaque solution, because at the site of the growth there might be such a degree of obstruction that most of the opaque substance would be held up there.

Another member had asked whether nembutal did not often cause some degree of excitement. He thought it was rare for this action to be observed; but there were, of course, several other narcotics to choose from, and his only object in advising one was to obtain flaccidity of the abdominal muscles to permit of palpation.

He thought it was Mr. Bishop who stated that he had diagnosed pregnancy as early as the 25th day and could feel small bodies like faecal pellets. He (Major Kirk) could only ask him how he was sure that such bodies were not, in fact, faecal pellets. To attempt to compress such bodies between the fingers would not only be painful to the bitch (even if it could be done) but probably damaging to foetuses. To judge by their mobility might lead to an erroneous conclusion.

Another member asked how he would diagnose internal haemorrhage in a dog which had sustained an accident. The usual signs were extreme pallor of the mucous membranes, increased respiration, failing pulse and temperature, weakness, and in fact all the signs of collapse.

Their Chairman had mentioned the difficulty often experienced of catheterising a cat. Gray's straight silver catheter must be used for this purpose, and it should be well sterilised and lubricated (with oil) before introduction. The cat was secured up on its back, the prepuce was pulled down and the exposed penis held between finger and thumb of the left hand. Generally the catheter could then be inserted provided it was not of too large a calibre. He had found, however, that in some cases the introduction of a catheter served only to pack still tighter the sabulous substance clogging the urethra, and in such cases he at once performed urethrotomy behind the penial bone, the catheter being inserted in the urethra at the surgical wound. It could then be passed in both directions.

Major Taylor had also asked how dogs and cats were tested for tuberculosis. There were two methods, the subcutaneous and the ophthalmic. In the former, after ensuring that the animal was not already fevered, ½ c.c. of tuberculin was injected hypodermically (¼ c.c. for cats) and the temperature was taken at the second hour and every hour thereafter up to the 18th hour. The positive reaction was a gradual rise of temperature until it exceeded 2·5° higher than normal. But this was an irksome and not altogether reliable method of test, and many practitioners considered the ophthalmic test easier and more satisfactory. This required the introduction of four or five drops of non-carbolised tuberculin into the conjunctival sac. A positive reaction was denoted by the purulent conjunctivitis which ensued in about six hours. This might last for one or several days.

The Common Respiratory Affections of Horses

WAKEFIELD RAINEY, *C.B.E.*, M.R.C.V.S.

The paper by Dr. J. T. Edwards, entitled "The Aetiology of the Commoner Equine Respiratory Diseases in Relation to Recent Influenza Research" (*Vet. Rec.*, October 5th, 1935) and the translation of an article by Professor O. Waldmann and Dr. K. Köbe entitled "Epizootic Cough in Horses" (*Vet. Rec.*, January 25th, 1936) show that the official history of the Great War and the experience recorded therein has done little to diminish the muddle of the identity of pink eye and croupous pneumonia of the horse. These articles ignore the essential part of that experience and revive the confusion of 1914 as regards equine pneumonia.

Wooldridge, in his "Encyclopaedia of Veterinary Medicine" epitomises the position in the following words: "Some Continental observers regard contagious equine pleuro-pneumonia as a pectoral form of pink eye, but to the writer the pronounced differences in most of the symptoms strongly support the view that it is an entirely different disease." Of course it is possible that in some instances we may be dealing with different diseases from those which Koch investigated in 1900 and Gaffky, and Löffler and Luhrs at intervals examined between 1912 and 1925. Epizootics come and go and our accurate records of the particulars of animal diseases have been far too short to enable us to know the whole effect of time and place upon their manifestations. The British military observations are not restricted to a few horses here and there but are based upon the unbroken and vigilant attention to many hundreds of thousands of animals during four continuous years, on four continents and two oceans, and they cannot, therefore, be lightly disregarded.

A Tangled Skein.—An intense study of the admirable summary given by Dr. Edwards in his article, of the principal researches in Germany and France into the respiratory affections of the horse from 1881 to the present day, may be rewarded by a clear idea of the Continental position; but it can hardly lead to the conclusion that the Continental workers themselves are clear about the identity or even the nature of the various diseases. For example, as regards

the identity of shipping fever—or Brussels disease as the Germans called it—the Continental workers themselves seem to hold opposite views on an essential point. Gaffky and Luhrs appear to have found that the influenza pectoralis of Friedburger was identical with shipping fever, whereas Waldmann and Köbe found that epizootic cough was identical with shipping fever but not with influenza pectoralis. Thus there still seems considerable confusion in the Continental work and the writer believes that far more light may be gained from a clear description of the British clinical experience during the Great War, to which we now proceed.

War Experience of Equine Respiratory Affections.—Of all the horses and mules, more than a million, that came under individual observation by British veterinarians during the Great War (as part of organised arrangements which were far more complete than those of any other belligerent) nearly half came from the Americas over the seas into British ports after voyages of from two to six weeks. The bottle-neck of close clinical attention through which all these animals had to pass extended from New Orleans to Montreal on the American coast to any port in the British Isles and finally to Southampton. The period of this observation was never less than about three months and was often much longer.

The central registry for all this work was in the office of the Director General of the A.V.S. The headquarters staff all worked together in the closest harmony and in equal harmony and close touch with our representatives in the Home Commands, in North America, and on the high seas, so that no pathological events of any importance could possibly escape our constant vigilance.

None of those in senior veterinary appointments in the various commands were academic scientists, as judged by modern standards, but all had had ample practical experience of equine pink eye, equine pneumonia, catarrhal fever, and epizootic cough. All and, so far as was known, all those who helped, went through the whole of the War perfectly satisfied that, with three exceptions, we were not at any time confronted with an important outbreak of equine pink eye or with any variant of equine pink eye. When our conclusions on this point were published, not only in the official history after the War but during the War in pamphlets and in Army Council Instructions, no single British veterinarian dissented. It has been left to Dr. Edwards, 20 years after, on the strength of work that had no connection with ours, to tell us that we were all mistaken and that influenza pectoralis (contagious pneumonia) was our main disease.

The three exceptions to the general prevalence of ordinary croupous pneumonia that we experienced during the War were:—

(1) An outbreak of fatal pneumonia among remounts collected in cattle sheds at Deptford soon after mobilisation in 1914. This outbreak was said to have been pink eye and the sheds were abandoned. If it was pink eye it is an odd fact that no instance occurred of the disease being conveyed elsewhere by some of the many in-contacts that survived. We were hardly organised at that time to deal with the matter and the writer can give no details because he was in France at the time.

(2) An outbreak of respiratory disease of an infectious sort in Ireland in 1915. This was ably dealt with: all the sick and in-contacts were carted out into fields and this stopped the outbreak. Probably pink eye.

(3) Outbreaks in India during 1915 and 1916 of genuine pink eye. It is relevant to note here that typical pink eye is enzootic in India and that a proposal is on foot to have it scheduled as a contagious disease.

War-time Research.—It has been objected elsewhere that our war-time research did not amount to much. It is true that, as compared with modern research staffs, equipment and money, our researches were inadequate, but they sufficed at least to prove that we were not dealing with any such a highly infectious disease as pink eye. Watkins Pitchford, at Swaythling, and Olver and others, in Canada, suggested that shipping fever, so far as experiment could determine and common sense decide, was the same disease as that described by Wooldridge as equine croupous or pleuro-pneumonia (contagious pneumonia) and not equine pink eye as described by the same author and by Hutyra and Marek.

Dr. Edwards, in his rejoinder to the writer's criticism of his paper last year, suggested that the difficulty of our disagreement in this respect might be resolved on the assumption that shipping fever was some special variety of equine pneumonia, but there is no evidence to support that supposition. Whatever shipping fever may be it is plainly the same disease as the croupous pneumonia of civil practice in peace time exacerbated by the hardships of war. In this connection it will be illuminating to give some details of the dramatic results of our inquiry into shipping fever and to emphasise the important part played by Watkins Pitchford in clearing up the fog that then enveloped the aetiology of that disease. In 1915 we were faced with appalling mortality among remounts from pneumonia. At that time our conception of the aetiology of equine pneumonia was that of contemporary teaching, and we regarded the common croupous pneumonia of the horse, when it was found simultaneously affecting a number of animals, as a highly infectious disease subject to control by the usual means of quarantine and disinfection and amenable to treatment by

chemotherapy. These methods, however, completely failed to arrest the never-ending outbreak of 1915. Thus defeated and anxious we approached the Treasury, begging them to grant money for research, and those who sneer to-day at our paltry efforts should know that it took all our patience and ingenuity to get £1,000 for this work. The public purse may have been open for shells but it was not to us.

Within a few weeks of his appointment to undertake the investigation, Watkins Pitchford reported to headquarters his failure to transmit shipping fever to healthy horses by any natural or experimental means that he had tested and he suggested that as the occurrence of pneumonia among young heavy draught horses sent to Swaythling from the rural North and West of England seemed inevitable, no matter how much we disinfected the collecting centres and rolling stock on the railways, and as no drug seemed to have any curative effect, we should cease from trying to "cure" it and to prevent it by means of disinfection or quarantine, and should concentrate on mitigating its severity. This could be done by arresting its development in individual animals by ensuring that no animal with a temperature be allowed to travel. Every newly purchased horse, in short, should be regarded as a potentially sick animal, its temperature taken; and if this was raised it was protected accordingly, instead of regarding the new animal as infectious and protecting others from coming in contact with it.

These instructions, which were vigorously prosecuted and amplified, at once reduced our losses at Swaythling from 50 horses to less than five a week and prevented their serious recurrence there or elsewhere on land and sea for the rest of the War. In his subsequent written report, published in the *Veterinary Journal*, Watkins Pitchford hardly mentions his suggestion for routine temperature-taking, but discusses at length some unimportant bacteriological detail which has been fairly criticised by Dr. Edwards. The fact remains, however, that Watkins Pitchford was the means of saving more valuable horses and more money than any other veterinary research worker during the War.

Shipping Fever in Canada.—There was a time-lag in the reduction of mortality in Canada from equine pneumonia. This was inevitable. Montreal was a long way off and our representatives there were handicapped by their inability to control the movements of horses until they had actually arrived at the British remount depôts when it was too late to prevent the worst consequence of the metabolic disturbances due to the hardships of the journeys. Those who are familiar with the North American continent will know that shipping fever is a real menace, not only to horses but to cattle as the result of the long journeys that the animals have to travel under severe climatic and other adverse conditions. An animal has to be fit to stand a trans-continental journey in America.

Classification and Pathology

The writer, having but a slight acquaintance with bacteriology, is handicapped in the discussion of this aspect of equine pink eye and pneumonia, but he may have some advantage in having enjoyed a considerable clinical, as well as a unique administrative, experience of these diseases. Moreover it would seem from a study of our leading text-books as well as from the excellent summary of Continental literature in Dr. Edwards' article, that something other than bacteriological knowledge is needed to clarify the position as regards the relationship, if any, existing between equine pink eye, equine contagious pleuro-pneumonia, and the common croupous pneumonia of the horse (shipping fever) as well as of epizootic cough and catarrhal fever.

The only text-books available to the writer here (in the hinterland of Queensland) are Hutyra and Marek and Wooldridge, and both of these authorities express their doubts concerning the identity of some of these diseases. Moreover, the summary of Dr. Edwards, as well as his subsequent rejoinder to the writer's criticisms, is by no means free from dubiety. Hutyra and Marek are not definite about any respiratory disease of the horse, and Wooldridge, though he boldly affirms that pink eye and what he calls contagious equine pleuro-pneumonia are different diseases, admits his uncertainty as to the unvarying identity of ordinary croupous or lobar pneumonia with the latter. Wooldridge is definite, and rightly so, about the separate identity of catarrhal fever except that it may be related to strangles, but, oddly, he seems to have nothing particular to say about epizootic cough.

If anything useful is to come of the present discussion, the first thing is to define in some clear way what is meant by pink eye.

Equine Pink Eye.—Unless we go to India we shall have trouble to-day in finding material for a first-hand observation of this once-common equine disease. It may be disappearing in consequence of the thinning-out of the horse population and the generally better hygienic arrangements for those that remain. The old underground cab- and tramway-stables are gone and probably much equine disease has gone with them. Consequently we must rely on the definitions formulated by clinical workers of the horse-age in accordance with contemporary experience when equine influenza was common.

In this respect at least the text-books are definite enough. It is agreed that equine pink eye is an acute febrile disease of a highly infectious sort and that it has been transmitted by means of blood, serum, and semen. It was obviously contagious and it spread indicrimin-

ately among horses of all breeds and ages. In considerable epizootics one often saw cases that showed weakness of the hind quarters, or pink eye, or dropsical effusions, as well as pneumonic symptoms. But the main thing was its obvious and alarming infectivity. This is the disease which we of the horse-age knew as influenza: this is the disease which was observed in India in 1915 and is said to be enzootic there to-day. It is this disease, so unmistakable when met with in epizootic form, that we must now compare, for purposes of identification, with the alleged influenza of the Continent.

The Common Croupous or Lobar or Pleuro-pneumonia of the Horse.—Synonyms: shipping fever; contagious equine pleuro-pneumonia—the alleged influenza of Dr. Edwards and the Continental workers.

It has already been said that so far as Watkins Pitchford's investigations showed and observation and deduction could determine, the shipping fever of the Great War and the equine contagious pleuro-pneumonia of Wooldridge were, in symptomatic and *post-mortem* respects, one and the same disease, and that the marked tendency of our cases among heavy horses to develop gangrene was due to the unusual hardships of war. We were compelled, however, by our experience, to differ from the text-book account of the aetiology of this disease in so far as we could not find it to be a contagious disease in the accepted sense of that term. In this aetiological respect shipping fever corresponds with Wooldridge's account of simple croupous or lobar pneumonia.

As stated in the official history, so far as can be recalled, no report was ever received of any considerable outbreak of pneumonia among Army horses following the introduction into a mounted unit or a remount depôt of horses suffering from or recently recovered from shipping fever. If the infection of pneumonia had thus been commonly conveyed the matter would not have been overlooked during the whole four years of the War. We may be sure at least that the Remount Department would have drawn our attention to outbreaks because they never failed to notify us of other infections thus conveyed, *e.g.*, mange or ringworm. The same observation applies to horses on board ship.

This branch of our work received meticulous care and was rewarded by amazing success, far exceeding all precedents and all hopes. The writer, who, together with Brittlebank, personally interviewed every conducting officer and often the masters of ships after every voyage, so that no infectious disease on board was overlooked, affirms that on no occasion was equine pneumonia reported as having been conveyed to horses on shore in England as the result of coming into contact with animals disembarked from horse-ships. We had evidence of outbreaks of strangles, and mange, and ringworm, and of glanders, but never of pneumonia arising in this way.

It is surely inconceivable that outbreaks of an epizootic nature should not have occurred if we had been dealing with influenza or any other highly infectious disease.

Dr. Edwards and others have sought to account for our freedom from typical equine pink eye or other epizootic outbreaks of respiratory disease on the grounds that our horses were kept in the open. But the truth is that all our horses were at some time or other in stables or ships or both and that over 100,000 were in stables all the time.

The Identity or Otherwise of Shipping Fever with Contagious Equine Pleuro-pneumonia.—It is clear that important epizootic outbreaks of equine pink eye were not met with among British Army horses during the War except in India, but the equally difficult question of the identity of shipping fever remains to be solved. There are two possible ways of explaining our apparent freedom during the War from an obviously contagious croupous pneumonia.

The first suggestion is that we were in fact dealing with a contagious equine pleuro-pneumonia but that the infectivity of the disease was masked by the circumstance that every Army horse after purchase and while still a remount became at once infected and, when recovered, was immune from further infection. Such an animal would consequently be useless as a control for observing the infectivity of diseased animals, and could not contribute to an epizootic by becoming infected itself. It is true that a large proportion, although not all, of remounts soon after purchase suffered a febrile attack which, unless great care was taken, was apt to develop into pneumonia. Authorities agree, however, that, as in the human subject, one attack of such a febrile disturbance or even of pneumonia, does not confer a permanent immunity, yet our working horses were apparently immune from any epizootic outbreak of croupous pneumonia for the duration of the War, *i.e.*, four years. Towards the end of the War our stabled horses in Britain should long have lost whatever immunity they had but there is no record of any corresponding increase of croupous pneumonia among them as the result of the introduction or spread of infection through sick remounts, or of any outbreaks on demobilisation. Our experience, in short, was the same as that of commercial horse practice where sick new arrivals from the country do not cause an epizootic outbreak of croupous pneumonia among the seasoned animals.

Either, then, the text-books are wrong and a permanent immunity is conferred or we must seek some other explanation of our almost complete freedom from epizootic outbreaks of equine croupous pneumonia among regimental units during the War. The writer believes that the

alternative and true explanation is that there has been a traditional misconception of the origin of most, if not all, cases of common croupous or lobar or pleuro-pneumonia of the horse. He considers confusion has arisen in the past when pectoral influenza was common, and that the weight of evidence to-day points to a metabolic and not an infectious first cause of equine pneumonia as commonly found and especially of that aggravated form of croupous pneumonia known as shipping fever. The simultaneous occurrence of several cases of pneumonia among horses has led to the firm belief that such an incident is always attributable to a specific infection, whereas it can often clearly be traced to the exposure of the affected animals to similar changes of environment at the same time. The peculiar liability of the horse to suffer in health as the result of certain environmental changes is very noticeable in the long period of physical unfitness that results from moving horses from one country to another, or from the country to the town, or even from the field to the stable. Whereas human athletes can travel from the Southern to the Northern hemisphere or *vice versa* and compete with local athletes on equal terms, a Derby winner sent to Durban or Melbourne could hardly win a local race under nine months. The untimely death of the great New Zealand horse Phar Lap in America was probably indirectly due to the ill-advised attempt to ignore this phenomenon and to train and race the horse before acclimatisation was complete. The deeply-rooted tradition of "physicking" horses on a change of environment is an instinctive effort to correct an observed metabolic disturbance in certain circumstances.

The prevailing idea that the first cause of equine pleuro-pneumonia is a specific infection does not seem to have stood the test of the great clinical experience of the British veterinary service in the Great War. It is not, of course, imagined or suggested that a metabolic change of itself causes the observed symptoms: these are obviously due to bacterial attack upon an animal weakened by bio-chemical disturbance, but the pathogen may be able only to exert its harmful effects in the natural course of events after such a metabolic disturbance has taken place.

It is not suggested that natural infection by virus or bacteria can *never* occur without previous bio-chemical change—the word "never" should have rare admittance to the vocabulary of a clinician. Such factors as extreme delicacy of constitution or general ill health may be enough to break down the natural defences without any preliminary bio-chemical change of the degree required to facilitate the pathogenic conquest of a healthy strong animal. All that is affirmed is that the experience of the War and of commercial horse practice seems to point to a bio-chemical change as a necessary preliminary to natural infection leading to pneumonia in the great majority of instances, as well as to the difficulty and often the impossibility of infecting a horse by natural means until such metabolic change has occurred.

If this explanation is considered to be reasonable, the question arises whether the word "contagious" should be retained in describing what it plainly the most common form of equine pneumonia in Britain. Wooldridge, with characteristic caution, evidently has some doubt on this point when he says, in discussing croupous pneumonia: "This view that all cases are of the contagious type is one to which the writer is unable to subscribe, though it may be true in a large number of cases." If it is objected that only the word "contagious" will cover instances of the obvious horse-to-horse transmission of croupous or lobar pneumonia, the writer would say that such instances in his experience are extremely rare, apart from pink eye, and that care is not always taken to distinguish between croupous pneumonia and the epizootic form of broncho-pneumonia common in hunting and racing stables. This form of pneumonia (epizootic cough) and catarrhal fever are both obviously infectious and both may be complicated by croupous pneumonia. In this connection it may be useful to draw the attention of younger practitioners to a danger that may attend the open air treatment of croupous pneumonia.

In two instances where such cases were being treated in the open in vile November weather in East London, catarrhal fever with acute pharyngitis supervened and killed the animals. Fit horses in hard work, especially of the smaller and lighter breeds, seem far less disturbed than soft young heavy draught horses from the country by environmental changes and are consequently less liable to shipping fever. Thus racehorses and show-jumpers in training seldom suffer from their frequent inland journeys though they must often be subjected to the same "infection" that is blamed for the pneumonia of farm animals sent to towns. Seasoned troop horses were similarly immune. The writer, in common with others, observed that of over 700 seasoned artillery horses of which he took veterinary charge in 1914 and accompanied to France, hardly one developed respiratory trouble. On the contrary, on Army manoeuvres in peace time he had observed that respiratory trouble was common among the heavy draught horses from farms supplied for the duration of the manoeuvres by civilian contractors to complete the establishments of infantry transport and to draw the mess-wagons. These animals were picketed in the open.

Such observations, of which many more examples could be given, at least do not disturb one's impression that the first cause of equine

croupous pneumonia is usually a metabolic change.

Epizootic Cough. — Under this heading Waldmann and Köbe have sought from the obvious infectiousness of this well-known and usually benign respiratory affection of the horse to make considerable generalisations. They suggest among other things that epizootic cough and shipping fever or croupous pneumonia are only different manifestations of the same disease, though they deny that these diseases are related to contagious equine pleuro-pneumonia, or pectoral influenza. The practical British veterinarian with hunting and racing experience is quite familiar with epizootic cough, though his own teachers have seldom described it and certainly have not given it so good a title. He recognises it as a seemingly distinct clinical entity characterised by a usually benign broncho-pneumonia and a troublesome dry cough which, if neglected, may lead to a degree of broken wind, or other complications. The condition is obviously infectious even to elderly horses and seasons occur when for some time nearly half the horses of a hunt will be "coughing."

But unless all clinical experience is worthless, no veterinarian could agree that a benign and obviously infectious broncho-pneumonia is the same thing as a dangerous croupous pneumonia which is not epizootic, which is often accompanied by pleurisy, and which can be produced at any time at will by subjecting certain types of horses to certain sorts of vicissitudes.

The Claims of Luhrs to have Immunised Horses against Pneumonia.—Luhrs, quoted by Dr. Edwards, appears to be responsible for some remarkable claims in respect of research work carried out at Koch's Institute under Gaffky and afterwards directed by Löffler. It is claimed that what is called "equine infectious pleuro-pneumonia," but which may be almost anything, was transmitted from diseased to healthy horses. This was done by taking bronchial exudate free of bacteria from the lungs of young horses on the third day of their illness and applying it to the nostrils of healthy animals. Similar results were obtained by workers introducing the infection into the body by other channels when, without causing the animal any inconvenience, they immunised it against subsequent infection. Before these results can be generally accepted, repetition by others is desirable. Several questions present themselves to those with practical experience.

The first question is what was the disease that was being investigated and how did they infect the first horse? If the infection is contained in the bronchial exudate, and if the disease was shipping fever, why was the infective agent never coughed up in any of our hundreds of stables during the War in such a way as to infect a single in-contact animal? Is not the subject of the investigation the same as that of Waldmann and Köbe, *i.e.*, epizootic cough, which we all agree is infectious, and if so, why did Waldmann and Köbe not find that immunity could be conferred by the simple expedient of injecting bronchial exudate or its extracts under the skin?

The writer would venture to affirm that if it is suggested that the disease discussed by Luhrs was shipping fever the conclusions regarding transmission and immunisation are still more difficult to accept. It does not seem remotely possible in the present state of our knowledge to prepare an antigen which would certainly protect horses from shipping fever to such an extent that the immunity would not break down under those environmental conditions which seem to be the primary cause of the disease as we know it in America and Britain.

In making these affirmations and stating these doubts the writer is not being reactionary but true to his conception of the pathology of the common equine croupous pneumonia of the horse and to his conviction that the Continental views of the identity of that disease and of equine pink eye are not true. He is unable to see how Continental research work of the sort claimed by Luhrs can be held to apply to this or that pathological condition in Britain until the identity of the disease on which Luhrs and his colleagues were working is established.

Post-War Clinical Experience.—In comparison with the evidence of the Great War the individual experience of one man in civil practice seems insignificant and the following brief observations are only made as a reply to the suggestion of Dr. Edwards that our shipping fever may have been a special variety of pneumonia. For several years after the War the writer was engaged in horse practice in East London, and it was natural that he should be anxious to compare the cases of respiratory disease met with under these conditions with the shipping fever of the Great War. It was also natural that he should disregard the so-called contagiousness of croupous pneumonia and take no steps to segregate cases of this disease. He found his civil experience as regards respiratory disease of the horse to be identical with his military observations, except that, under the milder conditions of peace, gangrenous complications were less likely to supervene.

During six years of exclusively horse practice, he was never called upon to deal with an outbreak of pink eye or infectious pleuro-pneumonia, though small outbreaks of catarrhal fever and epizootic cough were not rare. Croupous pneumonia was observed mainly in new arrivals from the country and, though no precautions were taken, infection was not observed in any instance to spread to seasoned animals.

In the early part of the century he had often been called upon to deal with outbreaks of pink

eye, consequently he concludes from his post-War experience in England, as well as from his War experience, that equine pink eye is tending to disappear from Britain. Nearly all cases to-day seem to be either the common croupous pneumonia, catarrhal fever, or epizootic cough.

Summary

(1) Details of British military veterinary administration during the Great War are given, and the epizootology of equine respiratory affections is discussed, with a view to clarifying the many confused ideas concerning the relationship of the common respiratory affections, and especially that of equine pink eye to equine croupous or lobar or pleuro-pneumonia.

(2) It is shown that, except in India, outbreaks of pectoral influenza very rarely occurred among British Army horses, and that the heavy losses from equine respiratory disease during the first two years of the Great War were due to a non-influenzal equine pleuro-pneumonia which rarely, if ever, assumed an epizootic form among or spread to working horses.

(3) It is suggested that this apparently non-contagious croupous or lobar pneumonia is the commonest form of pleuro-pneumonia in Britain to-day, that the first cause is a metabolic disturbance, and that the word "contagious" should be dropped from the ordinary description of this form of pneumonia in order to put an end to the long confusion between this disease and the pectoral form of influenza.

(4) It is suggested that the claims put forward by Luhrs, and sponsored by Edwards, to the effect that equine pleuro-pneumonia can easily be transmitted artificially, and that healthy animals may easily be immunised against this disease, need further proof.

(5) It is concluded that equine pink eye, equine pleuro-pneumonia or contagious equine pleuro-pneumonia or shipping fever or croupous or lobar pneumonia (all synonyms of one disease), equine broncho-pneumonia or epizootic cough, and catarrhal fever are four distinct clinical entities in British veterinary experience and should continue to be so described in our literature.

(6) Finally it is urged that as neither the course of time nor the abundance of testimony has been successful in distinguishing accurately between the pectoral form of pink eye and the so-called contagious equine pleuro-pneumonia it should be a rule to regard all obviously infectious or epizootic outbreaks of equine lobar or pleuro-pneumonia as the pectoral form of pink eye.

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It is now no longer possible to purchase humane killers or the necessary ammunition without the production of a firearm certificate. Persons requiring such weapons for the slaughter of animals are able to obtain certificates free of charge, however.

The Veterinary Record

May 15th, 1937.

The Nutritive Value of Raw and Pasteurised Milk

CONSIDERABLE controversy has raged for many years over the effect of pasteurisation on the nutritive value of milk. Many experimental results have been reported and variously interpreted. In the Report of the Committee on Cattle Diseases the position was summed up in the following words: "The ambiguous results of large-scale feeding experiments, and the uncertainty of deductions from mere theoretical considerations lead us to the conclusion that there is not sufficient evidence to support the presumption that pasteurisation is harmful from the point of view of human nutrition." The conflict of experimental evidence and the deductions drawn therefrom, although arising in many instances from an incorrect planning of the experiment, seem to show that if any deleterious result of pasteurisation does exist it is so small that great difficulty is experienced in demonstrating the result clearly. Some time ago a special committee on the nutritive properties of milk was formed under the auspices of the Milk Boards, the Medical Research Council and other interested bodies, in order to arrange for the carrying out and collecting of properly planned experimental data on this vexed question. The first report, emanating in the main from the National Institute for Research in Dairying, has now been published. This report is reviewed elsewhere in this issue; its experiments have been thoroughly planned, carefully carried out and analysed by statistical and other means. In their work the authors have examined the questions of the lessened availability of calcium and phosphorus, the lowered digestibility of the proteins and the diminished amount of vitamins alleged to result from the process of pasteurisation. They report that, working with rats, they can detect no difference between the nutritive qualities of raw and pasteurised milk except in their content of vitamins B and C. The amount of diminution in vitamin B complex has not been assessed accurately but appears to be small and the loss of vitamin C is about 20 per cent. Furthermore the authors could obtain no signs that any vital *unknown* factor of nutritive value present in raw milk was destroyed by pasteurisation. We must

congratulate Professor Kay, Dr. Kon and their colleagues upon this report, for apart from omitting to refer adequately to the previous and rather contradictory papers of Mattick and Golding, they have handsomely reversed the views previously supported by the Institute and now bring forth the best and most satisfying proof of the negligible effect of pasteurisation upon the nutritive qualities of milk.

Reference is made in our abstracts section to another paper, by Wilson, Minett and Carling, reporting the results of experiments with calves fed on raw or pasteurised milk. In these experiments the authors have avoided the errors of working with too few animals or with animals that are diseased. They were unable to obtain any evidence that raw milk is of higher nutritive value for calves than pasteurised milk.

Sometimes claims are made that there is a loss of beneficient antibodies from milk when this is pasteurised. As there is no evidence supporting the view that antibodies exist in milk, apart from colostrum obtained from healthy animals, this supposed loss of substances of this character can have no influence upon the consumer.

Finally it may be pointed out that compulsory pasteurisation has now been in force for several years in many American and Canadian cities without any evidence of detriment to the health of either children or adults.

It seems, then, that the long controversy upon the effect of pasteurisation of milk upon its value as a human food is likely soon to be settled; for it is reasonably certain that there is no significant loss in this value apart from some small diminution in the quantities of vitamins B and C, which loss is of little importance in view of the fact that these substances can be so easily added.

"IRISH VETERINARY CONGRESS IN MINIATURE"

Professor T. G. Browne welcomed the Northern delegates at a joint meeting of the Veterinary Medical Association of Ireland and the North of Ireland Veterinary Medical Association, held at the Veterinary College, Ballsbridge, Dublin, on May 5th, and a report of the proceedings at which gathering will be published in the *Record* in due course.

Professor Browne said this was the first occasion on which the two Associations had come together. He hoped the meeting would lead to more intimate relationships so that it might be regarded as an Irish veterinary congress in miniature and the beginning of greater things to come.

ANNOTATION

Milk-borne Disease in Man

In an annotation of reasonable length it is not possible to give more than a brief summary of knowledge on this subject. Nevertheless, even a brief survey of established facts and reasoned opinions may be of value at the present time, if it can assist in evolving sound future policy. Should more detailed information be required, reference must be made to published articles and to the various scientific discussions which have been held during recent years.

One may open by citing the particular diseases that have been conveyed by milk and so make this fluid "unsafe" for human consumption, the term "unsafe" being used in contradistinction to "unclean." They are: tuberculosis, undulant fever, streptococcus infections (septic sore throat, scarlet fever), typhoid and paratyphoid, dysentery, acute gastro-enteritis, diphtheria.

Prevalence of Milk-borne Disease

In the first place, let us consider the extent to which milk-borne disease exists. Most of the data on this point have been collected in the United States and Great Britain, and in these countries figures have been produced from time to time which give some idea of the magnitude of the problem. Human tuberculosis of bovine origin need not be considered in any detail here, since the information has been frequently quoted and should now be widely known. It has been estimated, however, that not less than 100,000 cases occurred during the 20 years prior to 1931. As regards other milk-borne diseases, figures from the United States were published in 1927 by Armstrong and Parran (1927). Between 1908 and 1926 there were 42 outbreaks of septic sore throat involving 21,045 persons with 139 deaths, and 40 outbreaks of scarlet fever involving 3,939 persons with 20 deaths. These figures may be compared with those given for outbreaks of milk-borne typhoid which, during the same period, numbered 479 with 14,968 cases and 219 deaths.

For this country some figures up to 1912 were given by Savage (1912), who mentions 20 outbreaks of milk-borne streptococcus disease which occurred between 1875 and 1912. Figures for the period 1912-31 are given by G. S. Wilson (1933). (*Vide table page* 624.)

As to the outbreaks of undulant fever in this country, Wilson has given reasons for his belief that there are annually some 500 cases which would be definitely diagnosable by combined clinical and serological examination.

When the tabulated figures given are

Outbreaks of Milk-borne Disease in Great Britain, 1912-1931 (Wilson).

Disease.	Number of Outbreaks.	Number of Outbreaks in which number of Persons affected is stated.	Number of Persons affected in these Outbreaks.
Scarlet fever and septic sore-throat ...	31	25	3,087
Diphtheria ...	13	12	732
Typhoid fever, paratyphoid fever, and dysentery ...	25	22	1,843
Gastro-enteritis	12	10	3,759
Total	81	69	9,421

examined there are two points which call for comment. With the streptococcus outbreaks it will be seen that on the average the case-incidence in each outbreak is relatively high. The same is true of the United States outbreaks; probably the highest on record is that witnessed in Chicago (1911-12), where more than 10,000 persons were affected within the space of five or six weeks. There is one other important observation that must be made, namely, that the figures are certainly minimal ones and may even grossly under-estimate the true prevalence of milk-borne disease. Four reasons can be assigned for this: (*a*) some cases of sporadic disease or even some very small outbreaks are never officially recorded; (*b*) there are certainly milk-borne outbreaks which, for various causes, are not recognised by the medical authorities as being distributed by milk; (*c*) outbreaks are sometimes recorded by the medical officers of health only in their annual reports and it is admitted that the figures given above do not represent the fruits of a systematic search of all the available records; (*d*) the data refer to primary cases of illness only and do not include secondary or contact cases.

The Source of Milk-borne Disease

Let us now consider the origin of the various milk-borne diseases, taking them in order, and let us examine the evidence which incriminates milk as the transmitting agent.

In the case of tuberculosis, no one is likely seriously to dispute the evidence. The bovine type of tubercle bacillus can be distinguished by certain peculiarities and, when it is found causing disease in man, all are agreed that cow's milk is almost invariably the source.

Undulant fever may be caused by three species of the Brucella group, namely, *Br. melitensis*, *Br. suis*, *Br. abortus*. The first two of these have never been found in this country, while it is well known, of course, that *Br. abortus* is essentially a parasite of cattle and that the udder is one of its predilection sites. The risk to human health of *Br. abortus* infection no doubt varies from one locality to another, depending in part upon the incidence of the disease in cattle, but when infection does occur in man, it must be either (*a*) through direct contact with affected bovines or (*b*) through consumption of milk containing the organism. Since most of the reported cases of undulant fever in this country have been in town-dwellers, who have had no direct contact with cattle, one is forced in these cases to accept the second alternative; apart from this, of course, there is often direct evidence of more or less weight to indicate that the illness of the person arose from the consumption of raw milk.

With the enteric group of organisms (typhoid, paratyphoid and dysentery), unlike those so far considered, the evidence in the first place is epidemiological. As soon as it has become apparent to the medical authorities in a given district that cases of enteric disease are appearing in unusual numbers, enquiry may indicate the milk as the only common factor. When the enquiry is extended by assistance from the laboratory and organisms of the enteric group are found in the milk, it will then usually be discovered that some person occupied in handling milk or milk utensils is a carrier of the organism in question. The only logical conclusion, therefore, is that this person has infected the milk either directly through finger contamination or indirectly through water contamination. To what extent organisms gaining access to the milk in this way can grow in it at atmospheric temperatures is a matter still undecided. Nor is it yet certain whether enteric germs can infect the cow so that she becomes an active excreter of the organisms. All that is reasonably certain at the moment is that the infection is milk-borne.

The term "gastro-enteritis" is in one respect not very specific, but under it we may include those cases where the milk has become contaminated with certain "food-poisoning bacteria." These organisms were at one time referred to as "*B. enteritidis, Gärtner*," but a more appropriate designation now would be (*Bacterium* or) *Salmonella enteritidis*, and probably the so-called Dublin type is of the greatest importance in the present connection. Certainly the Dublin type is that member of the group which most commonly causes disease in cattle, and it is also pathogenic to man. It may gain entrance to the milk either by the udder or from the intestinal tract and it is known that cattle can act as "healthy" carriers, just as is the case with typhoid in man.

With regard to diphtheria, the part which may be played by the cow cannot be regarded as settled, though the common belief is in direct contamination of the milk from man. As long

ago as the latter part of the last century, however, Klein suggested that actual infection of the animal is possible. All one can say is that on at least two occasions diphtheria bacilli have been isolated from natural lesions on the teats.

In the case of streptococcus diseases, more should be said because in some respects our knowledge is more complete. As with typhoid, we have in the first instance epidemiological evidence, and this, with outbreaks of any size, is usually quite clear. The outbreak starts in an explosive manner, many cases of sore throat (tonsillitis, angina), together with a variable proportion of cases of scarlet fever, occurring suddenly among persons consuming raw milk from a particular dairy. Persons in the same district who consume milk from a different source are not affected. Further enquiry has in the past often caused suspicion to fall upon a particular farm and has indicated one or more of the milkers as the original source on account of a history of sore throat. The next link in the chain has been the proof that the suspected persons are carrying haemolytic streptococci of a particular type in their throats, that streptococci of this type are also present in the milk as well as in the throats of persons involved in the epidemic. By considering the dates on which the various events took place, the conclusion is reached that the infection is passed from the milker to the milk and thence to the patients. It was at one time commonly supposed that the milk supply was contaminated directly by human agency, with or without the added possibility of the organisms multiplying in the milk. What seemed at the time to be a less probable explanation was postulated in 1911 by Savage, namely, that the milk was contaminated in an indirect way, the suggestion being that the milker infected the udder or teats of the cow and so gave rise to an active infection of the mammary gland. It is becoming more and more clear that the second view is the correct one, and the evidence in favour can be placed under three headings: (*a*) epidemiological, (*b*) cultural, (*c*) evidence concerned with the cow (Minett, 1937). With regard to (*a*), the point is that widespread and continuous epidemics in man can scarcely be accounted for by casual contamination of milk by human beings, unless the organisms can grow with fair ease in milk at atmospheric temperatures. (*b*) Careful experimentation, the results of which will shortly be published (Pullinger and Kemp, 1937), has shown that in raw or pasteurised milk at atmospheric temperatures haemolytic streptococci, such as may cause disease in man, either do not multiply at all or hardly multiply appreciably before the milk is unfit for human consumption. We should note, therefore, that the oft-repeated statement that milk is an excellent culture medium for micro-organisms requires to be modified in this particular instance. (*c*) The evidence under this heading is now definitely positive in character. Firstly, it has been proved experimentally that the cow's udder can be infected with streptococci from man and that as a result the milk secreted comes to contain very large numbers of streptococci, which remain for weeks or even months. This would explain the dangerous contamination of the mixed milk which may arise from the presence in the herd of a single infected cow. Secondly, on a number of occasions cows naturally infected in the udder with streptococci of the so-called "human type" have been found in herds associated with epidemics of sore throat and scarlet fever. In certain cases it has been remarked that infection in such cows is associated with gross trauma of the teats, and there is also reason to believe that infection may for a time be non-clinical, so that the contaminated milk would normally reach the mixed supply. In the United States there are records of at least eight serious epidemics of scarlet fever or angina in which it was possible to isolate the causal organism from quarter samples of milk from a cow supplying the affected households. In Great Britain fewer outbreaks of this nature have been recorded, but in two instances an infected cow has been identified.

Thus, observations on the lines mentioned above have not only made it clear that many epidemics have been traced to milk but have also indicated the way in which the contamination has been brought about.

F. C. Minett.

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ENGLISH COW'S RECORD MILK YIELD

Beggarmaid, a cow owned by Captain W. S. Fielding Johnson, of Manor Farm, Compton Bassett, Colne, Wilts, completed on Saturday last a milk yield which constitutes a world's record for a Shorthorn. In the last 24 hours she gave 72 lb. of milk, which brings her yield to 32,715 lb. in 357 days. This beats the previous lactation record held by the famous Australian Shorthorn cow Melba the Fifteenth of Darbalara. Beggarmaid already holds the record for lactation period yield by a Shorthorn cow in this country, having given 32,211¾ lb. of milk in 350 days since calving on May 18th, 1936. By this performance she eclipsed the record of Dumpling, the property of Mr. John Day, of Stone House, East Pennard, Shepton Mallet, Somerset, that had stood since 1931.

REPORT

[Milk and Nutrition: Part I—The Effect of Commercial Pasteurisation on the Nutritive Value of Milk, as determined by Laboratory Experiment. From the National Institute for Research in Dairying and the Rowett Research Institute, Aberdeen. Price 2s. 6d. (3s. post free), from the N.R.I.D.]

This volume contains the results of the most convincing experiments so far reported on the effect of pasteurisation on the nutritive qualities of milk. The work has been carried out under the auspices of the Milk Nutrition Committee set up by the Milk Boards, the Medical Research Council and other bodies; its experiments have been carefully planned and the results are submitted to critical analysis both by statistical and other methods. The results reported can probably be accepted with far greater confidence than much work heretofore reported on this subject.

In a foreword by Professor Kay and Sir John Orr, it is pointed out that "Of the milk sold in this country a large proportion is now pasteurised, and the question as to whether or not such heat treatment seriously diminishes the nutritive value of milk is obviously one of serious social importance. . . ." "Of the large amount of published work little can be regarded as really convincing. Much of it is contradictory. The reasons for the apparently discordant results are frequently revealed on scrutiny; many of the investigations will not bear a careful examination of their planning and technique. Thus in some of the experiments quite elementary precautions seem to have been neglected, *e.g.*, raw milk from one source has been compared with pasteurised milk from a second source, or no control of volume of milk intake as between one group of experimental animals and another has been made. The method of distribution of animals between different groups has sometimes been unsatisfactory, and in certain instances the actual experimental results have been grossly misinterpreted."

Every attempt was made in designing the present experiments to plan them efficiently and the following decisions governing the experiment were made: (1) Pasteurisation should be carried out under commercial conditions; (2) raw and pasteurised milk should be from the same bulk; (3) the volume of the milk and not the weight or composition should serve as a comparison (in fact, no appreciable change was found in total solids or any of the chemical constituents as determined by ordinary analytical methods, on pasteurisation); (4) the number and quality of animals to be used in each experiment and the methods of experiment generally, were to be such as to allow a stringent test of statistical significance to be applied to the results; (5) that the effect (if any) of pasteurisation on the palatability of milk should be clearly differentiated from the effect (if any) on the nutritional value of milk.

For the work described in the first paper (by Henry and Kon) on "Raw and Commercially Pasteurised Milks as Sources of Calcium and Phosphorus for the Growing Rat" it was decided to make these elements the limiting factors in the metabolic experiments and a basal diet as low as possible in calcium and phosphorus but satisfactory in other respects was used and the requisite milk added to this. The authors conclude from their extensive experimental data that "the experiments have failed to disclose any significantly deleterious effect of commercial pasteurisation on the availability of the calcium and phosphorus of milk. As a matter of fact the calcium of pasteurised milk is to a very slight (about 3 per cent.) but statistically significant extent more available to female rats than that of raw milk. The difference is less pronounced (1 per cent.) and statistically uncertain in the case of males." It was found that the rats retained some 80 per cent. of the ingested calcium and phosphorus irrespective of the type of milk taken. The second paper by Auchinachie, from the Rowett Institute, fully supports the conclusion that the retention of calcium and phosphorus of milk determined by balance experiments in growing rats has been found to be unaffected by pasteurisation.

In the third paper by Henry, Kon and Watson, the biological values and true digestibilities of the proteins of raw and commercially pasteurised milks *from the same bulk* were compared, rats being used in paired experiments. For raw milk a biological value of 80·73 was found and a true digestibility of 95·05, while the corresponding figures for pasteurised milk were 81·45 and 95·63 respectively. The comparison of the two milks was carried out under strictly similar conditions, and, after statistical analysis, it is concluded that "there seems no doubt that the biological value of the proteins of milk is not affected by pasteurisation."

The fourth paper, by Gillam, Henry and Kon, deals with the effect of commercial pasteurisation on the vitamin A and carotene content of milk. The assays were determined in samples of butter churned from the milks and the origin of the butters was unknown to the investigators, who actually carried out the assay. It was found that no vitamin A or carotene was destroyed in the course of pasteurisation.

Kon, in the next paper, gives results of some preliminary experiments on the vitamin B complex of milk. A statistically significant loss of the vitamin B complex in the course of pasteurisation was found in the case of the

more rapidly growing males but not in the case of females. No exact measure of the extent of the loss is given, but it would seem to be small in view of the absence of effect on growing females.

With vitamin C, Kon and Watson report in the sixth paper that the average content of this vitamin in raw milk was 2·22 mg. per 100 ml., while that of pasteurised milk amounted to 1·75 mg. per 100 ml. There is therefore a loss of 20·8 per cent. of the original value of vitamin C on pasteurisation.

In a paper on the "Comparison of the Total Nutritive Value of Raw and Commercially Pasteurised Milks," Kon and Henry report that it was found impossible to differentiate between raw and commercially pasteurised milks when these were offered to rats in equal amounts (except for the addition of iron, copper and manganese) as the sole source of nourishment. The results were judged by the criteria of gain in weight, body length, composition of carcases and willingness to consume milk. The experiments suggest, further, that no *unknown* essential constituent of milk has been drastically reduced by pasteurisation.

The final conclusion is that the nutritive value of milk is not significantly affected by the process of pasteurisation. W. R. W.

ABSTRACTS

[**The Nutritive Value of Raw and Pasteurised Milk for Calves.** Wilson, G. S., Minett, F. C., and Carling, H. F. *J. Hyg.* (1937.) **37.** 243.]

Over a period of two years alternate calves, from a Shorthorn herd free from tuberculosis and contagious abortion, were allocated without any selection whatever to one or other of two groups. One of these groups was fed on raw and the other on pasteurised milk. Each calf received its mother's colostrum for three-and-a-half days before being put on a milk diet, with the addition of hay *ad lib*. The milk was taken from the mixed morning's milk of the whole herd and was divided into two halves. One half was fed raw and the other was submitted to low-temperature pasteurisation at 145° F. for 30 minutes and subsequently cooled. The calves were fed morning and evening over an eight-week period on measured quantities that were in strict relationship to their body weight. The hay was practically untouched for the first month and then eaten in amounts of about 1 lb. a day rising to 3 lb. per day by the eighth week. With the exception of two calves born weaklings, and which died after 15 and 23 days respectively from causes apparently unconnected with the nature of their diet, all the animals—25 in the raw and 23 in the pasteurised group—throve well and showed no obvious signs of rickets or anaemia. In spite of the fact that the number of bull calves was very much less in the pasteurised than in the raw milk group the average increase in weight over the eight-week period was practically identical for both groups, being 61·18 per cent. for the raw group and 62·94 per cent. for the pasteurised group. The highest individual gain by a bull calf was 80 lb. and the highest by a heifer calf was 63 lb.; both animals belonged to the pasteurised group. It is concluded that there is nothing in the results reported to suggest that the nutritive value of pasteurised milk for calves is in any way inferior to that of raw milk. It is also pointed out that adequate pasteurisation of milk should prove of considerable value in the rearing of healthy calves in diseased herds, as farmers need no longer be deterred by the fear that calves brought up on pasteurised milk will develop less satisfactorily than those brought up on raw milk. W. R. W.

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[**Clinical Observations in Acetonemia of Cattle.** Fincher, M. G. *Cornell Vet.* **26.** 2. 142-158.]

The author gives the results of his observations of 131 cows having abnormal amounts of ketone bodies in the urine. The presence of the ketone bodies was diagnosed by a simple test on the farm, further chemical tests of the blood and urine being made in the laboratory. The types of the disease are described:—

(a) *The Non-Parturient Digestive Type*

Forty-seven cases were encountered. This type occurs ten days to six weeks after parturition and is characterised by loss of appetite, loss of milk and rapid loss of flesh. A few show incoördination of movement and a moderate degree of excitement. Mild cases recover promptly under treatment; in others emaciation may persist for several weeks.

(b) *The Non-Parturient Nervous Type*

Nine cases only recorded. Symptoms are a decrease in weight and loss of appetite, and frequently delirium is manifest in the form of chewing movements, rolling the eyes, convulsions, etc. Treatment with chloral hydrate, given *per os*, has yielded good results.

(c) *The Parturient Milk Fever Type*

Forty-one cases recorded. The symptoms are identical with those seen in cases of milk fever and the author suggests that in most of his cases both conditions existed at the same time.

The author recommends large doses of calcium gluconate (500 c.c.) which may have to be repeated one to four times for the treatment of type (*c*). In the other types he prefers similar doses of glucose either alone or with chloral hydrate and molasses.

In the actual cases quoted recoveries appear to have been excellent in type (*b*). In type (*a*) improvement was protracted, while of the five cases recorded under type (*c*), four of them were complicated by other conditions, *e.g.*, traumatic gastritis. D. W. M.

CLINICAL COMMUNICATION

Trichomonas Infection in Cattle

J. W. PRITCHARD, M.R.C.V.S.
BRIGHTON

I was recently consulted in regard to a herd in which cows were not holding to service, the condition having been present for the previous two years. Having read the article contributed by Mr. G. N. Gould, junr. (Southampton) and Dr. Stableforth to the *Veterinary Record* of February 20th and 27th last, the history led me to suspect the possibility of Trichomonas infection, and I advised that I should meet Mr. Gould in consultation.

The herd comprises about 100 Guernsey cows, kept under the most rational conditions, and being mostly pedigree, the young stock are brought up for sale purposes. Eight bulls—all of which had passed the agglutination test for contagious abortion (*Br. abortus*)—have been used. Some of the cows, and particularly the first calved heifers, were returning for service at intervals of from three to 21 weeks, causing much annoyance and economic loss.

The day prior to the first examination one cow had aborted a foetus at ten weeks' gestation. A number of cows had previously done this, usually at a period of nine to twelve weeks, the abortion being followed by slight vaginal discharge and return to oestrus in about three weeks. Two other cows examined had shown the usual discharge for several preceding days. In one, bilateral enlargement of both horns of the uterus was present, with absence of the uterine seal and characteristic discharge in the vagina. In the other there was unilateral enlargement of one horn and, except for the presence of the discharge in the vagina and absence of uterine seal, the condition was characteristic of ten weeks' pregnancy; this animal was kept under observation and aborted its calf four days afterwards. In both these cases the parasites, numerous and actively motile, were demonstrated in discharge taken from the region of the cervix.

On completion of examination of the whole herd it was found that 31 animals were involved. In three cases the cows had not returned to oestrus and were supposed pregnant seven to eight months, but had shown the occasional characteristic discharge; the uterus was in each case found to be tremendously enlarged.

The tendencies to repeated return from service and to early abortion—often unnoticed owing to the smallness of the size of the foetus—are characteristic features of the disease.

This disease is obviously one of vast economic importance, and its incidence is bound to be associated with great loss.

Special Meeting of Council, R.C.V.S.

A Special Meeting of Council was held at the College, 10, Red Lion Square, London, W.C.1, on Wednesday, April 21st, 1937, with the President, Mr. J. Willett, in the chair.

There were also present: Mr. H. W. Dawes, Major G. W. Dunkin, Sir Frederick Hobday, Major Hamilton Kirk, Messrs. G. H. Livesey, G. H. Locke, J. W. McIntosh, A. MacKenzie, Lieut.-Colonel W. S. Mulvey, Mr. Arnold Spicer, Captain W. K. Townson, Professor G. H. Wooldridge, Colonel G. K. Walker and Lieut.-Colonel T. Dunlop Young.

The minutes of the previous Special Meeting held on April 9th, 1937, were read and adopted.

Apologies for absence were received from Lieut.-Colonel J. W. Brittlebank, Professor J. B. Buxton, Messrs. J. C. Coleman, P. F. Dolan, J. Holroyd, Sir John M'Fadyean, Mr. G. P. Male, Major A. B. Mattinson, Professors J. J. O'Connor, J. Share-Jones, Lieut.-Colonel P. J. Simpson, Captain R. Simpson, Major F. J. Taylor, Mr. J. F. D. Tutt and Dr. A. W. Whitehouse.

BYE-LAWS

On the motion of Mr. LIVESEY, seconded by Professor WOOLDRIDGE, it was resolved:—

"That the following alterations to bye-laws passed at the Special Meeting of Council held on April 9th, 1937, be confirmed:—

BYE-LAW 100: Omit the words £10 10s. in the last line, and insert the words £5 5s.

BYE-LAW 67 (*b*): Add—The fee for examination or re-examination in Animal Management, if taken alone, shall be £4 4s.

BYE-LAW 77 (4): Add—Students obtaining not less than 60 marks in the subject of Animal Management shall be awarded 'credit' in that subject.

SCHEDULE II, SECOND EXAMINATION: Para. III, Animal Management:—

Delete the words (line 2) 'either at the Second Examination or,' and (line 17) 'Two Sessions.'

Transfer the whole thus amended, with the exception of the number, to follow the Syllabus for the First Examination."

It was resolved: "That the Common Seal of the College be attached to the bye-laws as altered."

Victoria Veterinary Benevolent Fund

MEETING OF COUNCIL

A meeting of the Council of the Victoria Veterinary Benevolent Fund was held at 10, Red Lion Square, London, W.C.1, on Wednesday, April 7th, 1937, when the following members were present: Dr. O. Charnock Bradley, Messrs. J. W. McIntosh, G. P. Male, W. Nairn, Lieut.-Colonel P. J. Simpson, Mr. J. Willett, Captain W. G. Wragg and Lieut.-Colonel T. Dunlop Young.

In the absence of the President, Mr. G. P. Male (Vice-President) took the chair.

The minutes of the previous meeting, having been published, were taken as read and signed as correct.

Letters of apology for absence were received from Colonel J. W. Brittlebank, Sir Frederick Hobday, Mrs. M. S. Nickinson, Major-General Sir John Moore, Major C. W. Townsend, Captain S. Villar, Mr. W. Woods and Mr. W. Jackson Young.

Correspondence.—(*a*) A letter was received from Mr. Warwick Fowle suggesting the issue of an appeal for a Coronation Fund for the Victoria Veterinary Benevolent Fund. After careful consideration it was agreed that it would not be advisable to launch such an appeal at the present time.

(*b*) A letter was received from Mr. H. P. Standley, Secretary of the Eastern Counties Veterinary Medical Association, sending a further donation of £3 13s. 6d., making the total Jubilee Fund raised by the Association to £60 18s., being £1 a year for the 60 years of its existence. The Association had also decided to increase its annual subscription from £5 to £10.

It was resolved: "That the heartiest thanks of the Council be conveyed to the Association for its very generous and welcome donation."

(*c*) Letters from Mrs. Nickinson transmitting the sum of £150 from the Ladies' Guild and a further sum of £31 10s., being the amount raised at the Annual Dance at Princes Galleries.

This news was received with acclamation and the Secretary was instructed to express to the Ladies' Guild the profound appreciation of the Council of the efforts made by the members of the Ladies' Guild which had brought about such a splendid result.

(*d*) A letter from Mr. H. Stainton transmitting a cheque for £25, being the fee paid for his services at the International Dog Show. Mr. Stainton left it to the Council to decide how the amount should be disposed of.

It was resolved: "That the thanks of the Council be conveyed to Mr. Stainton for his generosity and that the Secretary be instructed to pay £10 of the amount received to the National Veterinary Benevolent and Mutual Defence Society."

Secretary's Report

The following report of the Secretary was received and adopted, and he was instructed to send letters of thanks to the respective donors:—

New and increased subscriptions.

Miss Hilda Bisset			10 6
M. Donohoe			10 6
C. Mackenzie		1	0 0
P. E. Mullaney			10 6
H. O'Leary			10 6
G. A. Tomlin (increase)			10 0
	£3	12	0

Donations

Collecting Boxes						
Central Veterinary Society	2	8	8			
Major F. Chambers ...		10	0			
A. Cornish-Bowden ...	1	12	8			
Derbyshire Veterinary Association		18	6			
J. L. Cormack	3	3	0			
Captain H. Gillmor ...	1	11	6			
W. E. Ison	1	1	0			
North of Ireland V.M.A. ...	2	5	6			
Scottish Branch V.M.A. ...	4	1	1			
G. V. Slinn	23	0	0			
				40	11	9
Anonymous					10	0
Professor T. G. Browne (proceeds of raffle)				8	8	0
Cairn Terrier Association (per A. Cornish-Bowden)				1	1	0
J. B. Cowx					3	9
G. Dunn (non-member)				1	1	0
Eastern Counties V.M.A. (Jubilee Fund)				3	13	6
Ladies V.V.B. Guild				150	0	0
ditto (proceeds of dance)				31	10	0
W. W. Lang				10	10	0
Major L. P. Pugh				3	3	0
J. D. Rankin (Life Member)				10	10	0
C. Roberts				3	1	11
F. H. Stainton (Crufts Dog Show) ...				25	0	0
Yorkshire Veterinary Medical Society (Annual Dinner and Dance) ...				3	3	0
				£292	6	11

Life Membership.—It was resolved: "That Mr. J. D. Rankin and Mrs. W. Nairn be elected Life Members of the Fund, the latter in respect of the donations made by the Ladies' Guild, of which she is the President."

Annual Report.—A draft of the annual report on the work of the Council during the year 1936 was submitted and considered, and it was resolved: "That the report be approved for issue to the members of the Fund."

Cases

53.—Widow, five children, ages 28 to 18.

96.—Widow, six children, ages ranging 29 to 11. In both cases it was resolved that the grant be discontinued after the end of May.

132.—Member. Unemployed. Grant of £9

made towards rent. The Secretary reported correspondence he had had in regard to this applicant. The matter was left in the hands of the Executive Committee.

198.—Widow, aged 80. Receiving income of £83 per annum. A report from the Secretary was received in this case and it was decided not to accede to the application.

199.—Widow. Eleven children, ages 14 years to 8 months. Grant of £2 a week made to husband, who died March 21st, 1937. It was resolved: "That the grant made in this case be continued to the widow."

201.—Wife of member in mental hospital. Two children, aged 16 and 11. Applies for assistance towards educational expenses. On a report from the Executive Committee, it was decided that no grant be made.

185.—Aged 63. The grant of 10s. a week to be continued for the present quarter.

202.—Widow, aged 37. Two children, ages nine and two. Income £150 for 15 years. No grant was made.

203.—Daughter of member, aged 64. In poor health. Earns occasional sums by typewriting. No other income. A grant of 15s. per week was made in this case.

Investments.—The Treasurer was authorised to invest the balance in hand in the Donations Account in a suitable security.

VALUE OF DRIED GRASS

The claim that the extensive employment of grass drying would make Britain independent of imported feeding stuffs was advanced by Mr. J. E. Newman, of the Institute of Agricultural Engineering, at a meeting in London of the Society of Engineers.

There were six million acres on which hay was made. If one-third of that were used for grass drying and two tons per acre were obtained, four million tons of dried grass would be obtained, which would require the consumption of something between one and two million tons of coal.

"The importance of grass drying from the national standpoint is enormous," said Mr. Newman. "We waste, taking one year with another, something like half the food value of the grass we turn, or try to turn, into hay. Even in the best weather these losses are about 25 per cent. Artificial drying would keep the losses under 5 per cent.

"It gives what amounts to a twelve-month grazing season and provides a natural and healthy food for stock all the year round. At present it is doubtful, taking one year with another, if half the food value of the grass which is made into hay gets into the animal's stomach. That is to say, the food value of the land up for hay could be doubled by artificial drying."

Mr. Newman suggested that a means of cheapening drying was to wilt the grass. If the grass wilted to 60 per cent., as it would in a few hours in fine weather, the output of the drier could be doubled and the cost of drying halved.

N.V.M.A. DIVISIONAL REPORTS

Southern Counties Veterinary Society*

ANNUAL GENERAL MEETING AT SALISBURY

The Annual General Meeting of the Southern Counties Veterinary Society was held on Friday, March 19th, at the Red Lion Hotel, Salisbury, and was followed by a paper on "Differential Diagnosis of the Causes of Abdominal Distension in the Dog" by Major Hamilton Kirk. In the regretted absence, owing to illness, of the President (Mr. J. F. D. Tutt, F.R.C.V.S., of Winchester), Major F. J. Taylor, of Oxford, was voted to the chair. Others present included Messrs. G. Warnock Begg, H. S. Caldwell (Hon. Secretary), J. Facer, B. Gorton, W. F. Maynard, E. G. Morris, C. Tyler, E. Wallace, J. B. White and J. Stewart Wood, together with Major Hamilton Kirk, Major C. W. Heane, Captain W. K. Townson and Mr. W. H. Bishop, visitors.

The minutes of the previous meeting, as published in the *Veterinary Record*, were taken as read.

In addition to the letter from the President, the receipt was announced of apologies for inability to be present from Sir Frederick Hobday, Messrs. F. Beckett, N. S. Barron, W. J. Milligan and J. D. McLachlan.

The Chairman thought that, with reference to the letter they had received from their President, the members should express their sympathy with Mr. Tutt in his illness and their hope for a speedy return to his normal health, and on the proposition of Mr. J. B. White, seconded by Mr. Gorton, it was unanimously decided that a letter conveying their sympathy and good wishes should be sent.

The Late Miss Cust

Mr. Caldwell also reported that since their last meeting they had heard, with much regret, of the death of Miss Cust, who had passed away while in the West Indies, and he suggested that they stand for a few moments in silent tribute to her memory.

The Chairman remarked that he would also like to make a few remarks about Miss Cust, whom he had known very well from the days when both she and he were young students at the New College: "I was in Edinburgh with her," said Mr. Caldwell, "and she sat next to me in class during the first and second terms in the old three years' régime. She was always a most diligent student, a very pleasing person to know, and she carried out her arduous studies

*Received for publication April 15th, 1937.

under very great difficulties. Perhaps there are few of you here who realise the difference between the life of the veterinary student in those days and what it is to-day. Miss Cust was the lady pioneer of our profession, and you can well imagine that in those days it was very difficult for her to establish any position of respect, because men of a certain type were inclined to jeer at her, and thought she was extremely foolish to think of joining a profession like ours, which at that time was essentially a man's job. But she maintained her position and eventually gained the great respect of everyone, and became, as you know, an extremely brilliant practitioner and student, being first in all her classes. She should have obtained her diploma at the end of her third year, but at that time there was no law to permit her membership, and she waited many years until she was eventually admitted under the new law. I remember another fellow student of mine—Robert Burns, of Roscommon—who very kindly allowed her to go into his practice, where she was much loved by all his clients, who looked on her as a mascot. Wherever she went they thought it was only necessary for her to touch or speak to an animal for it to recover immediately. I recall another incident later, when there was a vacancy for an Irish county appointment. Several veterinary surgeons applied for it, but the people in the county would have no one but Miss Cust, and against a storm of opposition she was elected as County Veterinary Officer, with the most gratifying results to everybody. I can only say that I am proud to have been a fellow student with her and am pleased to hear that my old friend, Mr. Howard, of Ennis, has put forward the suggestion of a memorial to this great lady.

Hon. Treasurer's Report

The Hon. Treasurer said he had found it easier this year to give a correct report, following the alteration of the financial year back to December 31st as it used to be, though the full benefit would not be felt until next year. The current account showed a slight credit balance on the year's accounts.

The deposit account now stood at £34 6s. 10d., which was considerably lower than last year, owing to the £12 transferred to the current account during the year in order to put it on a sound basis.

The Hon. Treasurer then gave a detailed report of the expenses for the year, while copies of the balance sheet were available for the use of the members.

The adoption of the report was proposed by Mr. H. P. Rockett, seconded by Mr. Morris, and carried by the meeting.

Donations.—The meeting decided to renew the donations made in previous years to the Victoria Veterinary Benevolent Fund, the Library Endowment Fund, and the National Horse Association.

Membership Subscriptions. — The Hon. Treasurer raised a question regarding the action to be taken in the matter of outstanding subscriptions. After some discussion it was decided to leave the matter to his discretion.

Hon. Secretary's Report

The Hon. Secretary, submitting his report, gratefully acknowledged all the help given him by the President, Treasurer and Fellows, without which, he said, he could not have carried on. Four meetings had been held during the past year: at Salisbury, in March, when Mr. Begg gave a paper on "Grass Disease," the discussion on which was opened by Colonel Holness; in June at Tidworth, when there was a demonstration and paper by Major Townsend on the operation for "roaring," performed in the standing position; at Aldershot in September, when Major Oxspring gave a paper on "Radiology of the Horse," with demonstrations; and in December at Southampton, when Dr. Jordan contributed a paper on "Tuberculin Testing," the discussion on which was opened by the President. All these meetings were well attended, interesting, instructive and very enjoyable. There had also been one meeting of the Council of the Society, held to conduct urgent business connected with the Provisional Committee for the Bournemouth Congress.

A small increase had taken place in their membership. They had lost three Fellows by death—Messrs. Parr and Pack and Miss Cust, but six new Fellows had been elected. The membership could be further increased within the area of the Division with advantage to all concerned, and he would be very grateful for any suggestions towards this end.

Two points arose in connection with the Bournemouth Congress this July. One was the "At Home" which it had been decided to hold at the Royal Bath Hotel on Sunday evening, July 25th. The slender purse of their own Society precluded the possibility of their doing this as they would like it to be done, but he was happy to report that the other Divisions in the south had joined in, so that the cost to each would be comparatively small, while the function itself would be run in the best possible manner. All the real work in these negotiations had been done by Dr. Jordan, the local Hon. Secretary, to whom he personally was very grateful. The second point he wished to bring forward was with regard to the Congress itself. In the very full programme of demonstrations it was hoped to have operations on the horse's foot. He would be glad to hear of suitable subjects—animals suffering from quittor, horn tumour, etc. These should be horses requiring

treatment and he would like to have a few in view before July so that there would be no anxiety about the success of this demonstration.

At the last meeting of the Society they had appointed him to represent them at the Royal Sanitary Institute Conference on the Uniformity of Administration of the Accredited Milk Scheme. He attended the Conference, but he was sorry to have to report that it resulted in dissension rather than uniformity. Captain Simpson, the President of the N.V.M.A., made a very spirited refutation of Dr. Savage's disparagement of veterinary inspection and Major Rabagliati and Mr. Steele-Bodger also spoke well. It was his own opinion that the local authorities did not need the Royal Sanitary Institute to tell them how to administer the Orders.

Mr. Warnock Begg proposed the formal adoption of the report. This was seconded by Mr. Rockett and agreed to.

Election of Officers

The election of officers followed, and on the suggestion of Mr. Gorton, seconded by Major Tyler, these were re-elected *en bloc* as follows:—

President.—Mr. J. F. D. Tutt.

Vice-Presidents.—Messrs. F. Beckett and J. Stewart Wood.

Hon. Treasurer.—Mr. J. B. White.

Hon. Secretary.—Mr. H. S. Caldwell.

Council.—The officers as above, with Captain Bullen, Mr. G. N. Gould, junr., and Mr. G. W. Begg.

Representatives to Council, N.V.M.A.—The Hon. Secretary and Mr. F. Beckett.

The Chairman thought that the Society should make some recognition of the past work of these officers, and on the proposition of Mr. Rockett, seconded by Mr. Gorton, it was resolved that a very hearty vote of thanks be accorded to the President and all the other officers for their past services.

Membership.—The election of Mr. Arnold Spicer, of Oxted (proposed by the President and seconded by Mr. Begg), and of Mr. E. G. Morris, of the Ministry of Agriculture and Fisheries (proposed by Mr. J. B. White and seconded by Mr. Caldwell), was confirmed.

Address by Mr. Townson

The Chairman now observed that Captain Townson, of Peterborough, who was attending the meeting at the invitation of the President, had a few remarks he would like to make, and on the suggestion of the Chairman, and with the approval of Major Hamilton Kirk, who was to present a paper to the meeting, it was agreed that these should come next.

In accepting the invitation of the Chairman to speak, Captain Townson said he wished first to thank their President, Mr. Tutt, for his very kind invitation to him to attend their meeting, especially as it gave him the opportunity of listening to the paper to be given by his old friend, Major Kirk. The remarks he desired to make were a few that had occurred to him coming down in the train after reading Colonel Walker's article in the previous week's *Veterinary Record*. "We in the Eastern Counties," Captain Townson went on to observe, "are just as much interested in cattle as you are in the Southern Counties. The great problems we have to face are the same and the four great scourges — tuberculosis, contagious abortion, Johne's disease and mastitis—are constantly worrying us. It would appear that these diseases will never be eradicated or even controlled merely by the sporadic attempts of individual livestock breeders and dairy farmers wishing to keep clean and healthy herds: the problem is too vast to be tackled in that way. The immense losses caused by these diseases will continue unless there can be concerted action over the whole country, and it would therefore seem to be a matter for the State. If some definite scheme for the control of these diseases could be initiated with the backing of the State the general practitioner would come into his own and work would be provided for an increased number of practitioners. But it would well repay the country—for the loss to the milk industry, to name only one, must be enormous merely from the incidence of these diseases. I think it would pay the farming community if they could be persuaded to enter into a scheme for the provision of panel practice amongst veterinary surgeons, but as in the case of National Health Insurance the initiation of such a scheme should not come from the veterinary profession, though we ought willingly to support it if it were mooted.

It is, I feel, a good sign that much more enlightened interest is now being taken in such matters, and one of the indications of that interest is the recent appointment of a Government Committee of Enquiry into Veterinary Education. That such a thing should be possible shows that the important contribution which the veterinary profession can render to the public is being more clearly recognised. It is nothing less than a national scandal that for so many generations veterinary education has been left to fend for itself without either moral or material support from the State or the public. That state of affairs would now appear to be at an end and we can look forward, I think, with confident hope that in the future the veterinary profession will be better and more widely recognised. The veterinary schools are full to overflowing with students and some may wonder where they are all to make a living; but if only public opinion can be enlightened to recognise how

valuable from a material point of view a properly organised National Veterinary Service can be, I have no doubt that all the new graduates will be absorbed.

The Chairman said the programme now appeared to be to take all contagious diseases out of the hands of the general practitioner, also accredited herds, and eventually all tuberculin testing. As part-time practitioners they had devoted a great amount of time and trouble to the task of trying to educate the farmers as to the necessity of looking after their herds properly and eliminating unsuitable animals from them, and they had had a lot of uphill work to do to bring this about. He thought it would be agreed by all practical agriculturalists that they had done this quite satisfactorily. But now these accredited herds had been taken out of their hands and he personally had lost quite a considerable amount of his annual income by the change-over. He had written to the Senior Veterinary Officer for Berkshire, asking what the programme was in that county, and he had received a reply, dated March 16th, in which that officer gave the following summary of the arrangements which were operating from the beginning of this year:—

(1) That an applicant for a licence (otherwise than in renewal of an existing licence) be required to furnish certificates of the tuberculin test and clinical examination of his animals in support of his application at his own expense, the tests and examinations to be carried out by a veterinary surgeon in private practice nominated by the committee for the purpose.

(2) That the half-yearly tuberculin test and clinical examination of each herd in respect of which a licence is in operation be carried out by the whole-time veterinary officers of the Council.

(3) That animals added to licensed herds between the half-yearly tuberculin tests and clinical examinations and which require to be tuberculin tested and clinically examined be tested and examined at the expense of the licensee by one of the veterinary surgeons nominated by the committee for the purpose.

The Chief Veterinary Officer added that in Berkshire the whole-time veterinary staff carried out two of the quarterly examinations free of charge, while the other two were carried out by the owner's own veterinary surgeon nominated by the county council at the owner's expense. The only work under the Diseases of Animals Acts and Orders carried out by the county veterinary staff in Berkshire was a *portion* of the cases under the Tuberculosis Order of 1925, and he observed, in conclusion: "It seems that the general practitioners in Berkshire are not so hard hit as those in Oxfordshire." In his (Major Taylor's) reply to this letter he said that the conditions in Berkshire definitely compared favourably with those of his own county, Oxfordshire, in regard to the private practitioner, who looked like having a very thin time in the future, and he suggested that it would have been preferable to have had a scheme with more *mutual benefits*, and which would have absorbed men of long experience to help initiate the novices, who now seemed to be obtaining whole-time appointments—in some cases on leaving College without any practical experience or knowledge of local conditions. These, Major Taylor concluded, were his own views. He thought the old practitioners had been badly treated, and how some of them were going to get a living in the future he did not know. In his view the situation was most serious and required the urgent attention of those bodies who professed to control their future destiny.

Next Meeting.—The Secretary was given instructions regarding the next meeting and its agenda.

Paper.—Major Hamilton Kirk was then invited by the Chairman to contribute his paper on "Differential Diagnosis of the Causes of Abdominal Distension in the Dog." [This paper is reproduced, together with a report of the ensuing discussion and of the essayist's reply, at the commencement of this issue of the *Record*. —*Editor.*]

The hearty thanks of the meeting to Major Kirk were voiced by the Chairman, and later whilst the members were taking tea there was another and more informal discussion of many of the points raised by the paper.

During the meeting Mr. E. G. Morris handed round two *post-mortem* specimens for inspection and comment: one, the lungs of a pig heavily infested with strongyles, and the other a pair of kidneys from the same animal.

H. S. Caldwell, *Hon. Secretary.*

* * * * *

Lancashire Veterinary Association*

ANNUAL GENERAL MEETING AT MANCHESTER

The Annual General Meeting of the above Association was held at the Grand Hotel, Aytoun Street, Manchester, on Wednesday, February 24th, at 2.30 p.m.

The chair was occupied by the President, Mr. C. F. Shawcross, other members present being Messrs. A. L. Mullen, R. C. Locke, G. Shirley, P. A. O'Neill, J. Cubby, P. J. Mitchell, H. R. Hewetson, J. Brennan, J. W. Wilson, H. Sumner, P. T. Lindsay, J. O. Powley, W. Woods, R. J. Thomas, Warwick Fowle, A. J. Wright, F. Hopkin, T. Wilson, J. H. Wright, R. H. Oddy, N. D. Heggarty, R. F. Bett, J. C. Baird and

*Received for publication April 6th, 1937.

Miss P. Stubbs. Miss E. H. Patchett and Messrs. R. F. Creasy and J. Fitzgerald were present as visitors.

Apologies for absence were received from Messrs. T. G. Millington, G. O. Davies, R. Hughes, G. Mayall, G. H. Locke, H. T. Matthews, H. G. Hewetson and J. Holroyd.

The minutes of the previous Annual General Meeting, having been published in the *Veterinary Record*, were taken as read.

Election of Honorary Associate Member

The President said that before vacating his presidential chair, he had the honour of proposing that the name of Mr. G. H. Locke be added to the list of Honorary Associate Members. Mr. Locke had had a long record of distinguished service and it was a fitting tribute to the service he had rendered to the Association to elect him an Honorary Associate; he had great pleasure, therefore, in proposing him. Mr. Locke's service to the profession included: (1) Membership of the Association for the past 40 years; (2) Hon. Secretary for 15 years in succession; (3) President of the Association for six years, 1913-19; (4) member of the Council of the R.C.V.S. from 1920; and (5) President of the R.C.V.S. 1934-35.

Mr. J. O. Powley supported the proposition, which was carried unanimously.

Correspondence.—A letter from Mr. E. H. Curbishley was read, in which he stated that he had given further consideration to his decision not to stand for re-election to Council, but he had concluded that it was in the best interests of the Association that his place be filled by a younger man.

Hon. Secretary's Report

The Hon. Secretary now presented his report, which was as follows:—

Throughout the period covered by this report there have been five general meetings, including the summer meeting. The following addresses and demonstrations have been presented at these meetings:—

(1) *Annual General Meeting, February,* 1936.—Presidential address, reports by the Hon. Secretary and Hon. Treasurer, discussion on the Report of the Northern Ireland Experiments with the Spahlinger Vaccine. Opener of discussion, Mr. H. G. Lamont of the Government of Northern Ireland.

(2) *General Meeting, May,* 1936.—Clinical contributions by members of the Division and discussion.

(3) *General Meeting (annual summer meeting), Preston, July,* 1936.—A series of demonstrations by members of the staff of the Lancs. C.C. Agricultural College, Hutton.

(4) *General Meeting, November,* 1936.—Address by Professor W. M. Mitchell, of Edinburgh, on "The Genital Passage of the Bitch in Health and Disease." Opener of discussion, Mr. H. R. Hewetson, of Southport.

(5) *General Meeting, January,* 1937.—Address by Mr. K. D. Downham, of the Harper Adams Agricultural College, Shropshire, on "The Prevention of Diseases of Domesticated Animals."

The meetings were all held under the Chairmanship of the President, Mr. C. F. Shawcross.

The average attendance was 25, a slight decrease from the previous year's figure. The meetings were equally distributed between Manchester and Liverpool.

Proceedings of Council.—Only two Council meetings were held during the year, both in Manchester. Average attendance twelve—a satisfactory figure. An outstanding feature of Council activity during the year was the creation of an Ethical Committee in the Association to collect evidence relating to acts of unprofessional conduct brought to the notice of the Association. A scale of fees for tuberculin testing has been recommended and adopted by the Association. Reports of Council proceedings were submitted to a general meeting in each case.

Obituary.—The Association has suffered grievous loss during the year. The deaths of Noel Pillers and Henry Sumner will be long felt. The deaths of J. Urmson, of Bolton, and T. H. Lomas, of Wilmslow, must also be recorded with deep regret. Letters of condolence were sent to relatives in each case.

Resignations.—G. McKee, Nantwich; J. Taylor, Winsford; Miss Tillemont-Thomason, Liverpool; H. A. Turner, Manchester; A. Alexander, Salford, and F. W. Priestley, Manchester.

All the above were due entirely to change of appointment and residence and were, therefore, unavoidable.

Election of New Members.—J. Cubby, Alderley Edge; C. Jones, Northwich; J. W. Wilson, Preston; R. J. Thomas, Liverpool; N. M. Clayton, Birkenhead; J. H. Patterson, Winsford, and A. W. Gill, Whaley Bridge.

The number of incoming new members balances the outgoing and remains at a normal figure. Members should persuade suitable candidates to allow their names to go forward for election to the "Lancashire."

Student Member.—Mr. G. N. Shirley was elected during the year.

Representatives on Council, N.V.M.A.—Messrs. C. F. Shawcross, R. C. Locke, T. Wilson, A. L. Mullen.

This report, concluding my term of office as Hon. Secretary of the "Lancashire," must bear record of the help and assistance given to me by the officers and members of the Division during the year.

On the proposition of Mr. H. R. Hewetson, seconded by Mr. J. H. Wright, the report was adopted.

Retiring Hon. Secretary Thanked.—Mr. R. C. Locke now rose to propose a hearty vote of thanks to Mr. A. L. F. Mullen for his services to the Association for the past six years as Hon. Secretary. This was seconded by Mr. H. R. Hewetson, who also praised his work. The President associated himself with these remarks, and added that the great amount of work which Mr. Mullen had put in was responsible for the smooth running of the meetings.

Hon. Treasurer's Report

The Hon. Treasurer, Mr. R. C. Locke, presented the financial statement and remarked that there was a balance of £22 9s. 2d. excess income over expenditure. There had been a decrease in the amount obtained from subscriptions, but this was not due to any falling off in membership or failure to collect the subscriptions from members. The reason was that in the previous year there had been a large amount of arrears paid and the income from this source was therefore larger than in a normal year. The Association had a balance of £224 8s. 6d. in the bank at the end of 1936, and Mr. Locke submitted that this was a very satisfactory position.

The Hon. Treasurer's report and financial statement were approved and adopted.

Election of Officers for 1937

President.—It was proposed by Mr. C. F. Shawcross, seconded by Mr. F. Hopkin, and carried unanimously, "That Mr. H. Sumner be elected President."

Vice-Presidents.—Messrs. C. F. Shawcross and G. Mayall.

Hon. Secretary.—Mr. J. C. Baird was elected.

Hon. Treasurer.—Mr. R. C. Locke was re-elected.

Hon. Auditors.—Messrs. J. H. White and A. Dobie (re-elected).

Election of Council.—Owing to the resignation from Council of Mr. E. H. Curbishley and the election of Mr. G. Mayall as a Vice-President, seven members were elected to Council, in the following order: Messrs. A. L. Mullen, H. T. Matthews, T. Wilson, G. C. Webster, P. T. Lindsay, J. Spruell and R. H. Oddy.

Induction of President.—The retiring President, Mr. C. F. Shawcross, referred to the great pleasure it gave him to ask Mr. Sumner to take the presidential chair. He paid tribute to Mr. Sumner who, he said, had all the qualities and attributes of an ideal President, and in concluding, thanked members for the support they had afforded him during his term of office.

Presidential Address

Mr. Sumner then took the chair, amidst applause, and presented his Presidential Address in the following terms:—

First I must acknowledge, and thank you for the honour you have accorded to me. Presidency of the "Lancashire" is not an office to be sought or accepted lightly and I do not anticipate that my year will be one where I enjoy prestige and privilege without accompanying difficulty and responsibility.

Not very long ago it was suggested that the Association should fall in with the movement in other parts of the country and adopt the title "North-Western Counties." We refused to sink our identity in spite of our many members and friends in Cheshire and neighbouring counties, and I for one am glad that the sturdy Lancashire independence asserted itself then. This year will complete three-quarters of-a-century in the history of the Association, and no mean tradition has been established under the long line of Presidents.

Even our old friend Mr. Woods cannot remember the birth of the "Lancashire" in 1862. Chief of the objects then stated was "the establishment, promotion and maintenance of a good and friendly understanding amongst its members." Can we say that this object has been achieved? Despite our differences of opinion and interest, I think we can. We all know that, in the Association, if we talk sense it is respected; if nonsense, it will be corrected and no hard feelings left. Members come to meetings often at some inconvenience, but I think few go away feeling that the effort has not been worth while. Even if they have learnt nothing and perhaps contributed nothing but their presence, the contact with old friends is cheering. To hear of someone else's problems often lightens our own. I would emphasise the word "maintenance." It is not enough to have achieved a friendly atmosphere. It will be my endeavour to foster it and hand it on to my successor unimpaired, and in that I look to you confidently for help. But this is not only a social club devised for our entertainment. I urge all our inarticulate members who sit in silence meeting after meeting, to celebrate this seventy-fifth year, this Coronation Year, by breaking what must be monastic vows or else inhibitions. And the newcomers and student members I invite to contribute their ideas. Oratory is not a notable feature of our proceedings and perhaps it is just as well. A plain statement of fact or opinion, even misguided opinion, will help.

The profession is going through a period of rapid growth and suffering the usual pains and penalties. It would be fashionable to attribute the pains to a deficiency. If so, it is a deficiency of understanding. So many of the younger men have been attracted by the whole-time service whose expansion has been so marked, that one wonders where the practitioners of the future are to be found. The plain position is that good

assistants for general practice can hardly be got "for love or money." The tendency to specialisation which is evident in most professions as their fields of interest widen, cannot develop very far with us. The monetary value of our patients as well as the financial standing of many of our clients will not permit the high fees commanded by the supreme expert in one very limited subject. We shall probably always rely for the greater part on the general practitioner with his working knowledge of all aspects of our calling, his readiness to tackle any problem to the best of his ability. But some specialists we must have. It is a pity that, in growing, we have suffered some cleavage. The whole-time service is separating off and the research branch is separated. It cannot possibly be good for the profession to have such opposing factions as have been demonstrated in some public utterances to exist. It is my considered opinion that the split is neither permanent nor serious, only prominent. The whole-time man must naturally become more expert within his narrower field and the sooner general practitioners recognise this truism the better. The curious thing is that practitioners as individuals are both friendly and helpful. If we remember that a whole-time appointment does not make a man cease to be a veterinary surgeon and that the practitioner can contribute much to public health, it may restore some sanity to the provocative discussions that occur on this difficult subject. I submit that there is ample scope for the practitioner and that it is extending yearly. There are so many problems crying out for solution that the practitioner and the researcher must come into closer alliance than at present. I am confident that it would lead to mutual benefit. To follow purely academic lines of research in the present state of our ignorance is wasteful. The seeking after knowledge for its own sake, however admirable in theory, is too idealistic for a profession so unendowed with rich legacies and donations. We are in the position of an industry demanding of its research department solutions which can be translated into action.

Within the Association we are fortunate to have members from all branches who have learned to live amicably and helpfully together. We are a cross-section of the profession, containing all the elements, one division of the larger body. I repeat that it will be my aim during this year of office to foster that spirit of the "Lancashire" and to spread it abroad in your name.

Mr. Woods thanked Mr. Sumner for his address.

Mr. Sumner, replying, said that consolation was given to the younger men when such as Mr. Woods had the inclination to come and take an active part in the discussion.

Clinical Cases of Interest

The meeting proceeded to discuss clinical cases of interest, and Mr. F. Hopkin drew attention to a case, which had come to his notice, of a greyhound bitch about four years old which appeared to be healthy as regards temperature and appetite. The nails on all feet had come off, including the dew claws—the condition was not painful and she was not very lame. Mr. Hopkin asked if others had had this experience and if they could assist him.

Mr. P. T. Lindsay said that he had met with cases similar to that described by Mr. Hopkin, and he felt iodine deficiency was the cause of the condition. He changed the diet and prescribed iodine and thyroid extract, with perhaps cod-liver oil, which seemed to be attended with good results and without recurrence of the condition.

Mr. H. Raynor Hewetson said he had not intended to speak that afternoon as he felt members might be weary of hearing his voice always raised on small-animal matters, and he had a feeling that some members thought nowadays that rather too much time was spent in discussing domestic pets. However, as there appeared to be something of a hiatus in the discussion, he would raise a matter which he thought was of serious importance—not only to practitioners like himself, more or less specialising in small animals, but also to the profession as a whole—the problem of specific diseases of dogs as it stood to-day. Looking through veterinary literature one found a fairly extensive range of transmissible diseases relating to the larger animals described with some definition of pathognomonic symptoms; in human literature one found a wider and fuller list with even more exact definition, but when it came to dogs one found an indefinite few, according to the author, with even more indefinite and overlapping symptoms.

For a long time, until the excellent work of Laidlaw and Dunkin, one might imagine that all the infections of dogs came out of a sealed box labelled "Distemper," but it now seemed that when these gentlemen had broken this seal to capture the virus distemper, a lot of other organisms had escaped which now roamed loose to set up diseases of their own. These gave rise to such similar syndromes that clinically they could not be differentiated in the early stages but which later developed along such a variety of extremely mild, moderate or hopelessly severe courses that one could not diagnose, prognose, or in many cases even treat with reasonable satisfaction.

Mr. Hewetson then outlined several cases to prove this argument. Amongst these one concerned an outbreak of so-called hysteria at a greyhound racing track, to which he had been called in consultation. At the time of his visit

there, the disease had been in existence for about ten days, approximately 100 out of 120 dogs being affected. The early symptoms were hysteria, later followed by fits, then muscular inco-ordination and paralysis and—in one case—violent death. He arranged for the dead animal and one live animal (killed for the purpose) to have *post-mortem* examinations at a laboratory. These proved practically negative, except to further in some degree the opinion he had given. Subsequently he understood some 60 per cent. of the animals died, but no further *post-mortem* examinations had been made—an incomprehensible omission, to his mind, in view of the losses involved, to say nothing of the loss of the knowledge which might have been gained to veterinary science. He had formed an opinion of these cases which, in his view, had not been shown to be unjustified, and had formulated lines of management and treatment, but he believed these did not find general favour with other veterinary surgeons who had attended these dogs. That, however, was not important. What was important was that here was a company owning approximately 120 dogs, a manager with broad vision and patience, ready to do anything his professional advisers suggested, and the best the veterinary profession could do was to allow about 70 unexplained deaths and the track to be closed for nearly three months. It was true that there were circumstances and conditions which were predisposing to illness and hostile to recovery—there was the usual personal element to deal with, including a shortage of staff adequately to carry out necessary measures—but, allowing for all that, it was a great blow at veterinary prestige. He believed that other tracks were being visited with similar misfortunes and if results such as these were being repeated, he shuddered to think of the effect.

Another example Mr. Hewetson gave concerned a small breeder's kennel where, at the start of the time described, there were two Lakeland terrier puppies approximately seven months, and two cocker spaniels, a dog approximately six months and a bitch about eight months, all running together. One day the Lakelands were noticed dull and had diarrhoea and temperatures in the neighbourhood of 105°. The cockers were then normal.

A few days later the Lakelands were normal except for brown, furry deposits on the teeth, but the cockers had temperatures of 103° to 104°. In a further few days the cocker bitch developed ocular and nasal discharge, bronchial catarrh, and was separated from the rest. For over a month this bitch was a typical clinical picture of distemper, the attack finally terminating in fits, chorea, inco-ordination, paralysis and death. The carcase was sent for investigation to Professor Dalling, who subsequently reported that the investigation proved negative to distemper. During this period the two Lakelands maintained steady subnormal temperatures and the cocker dog an elevated temperature of 103°. All persisted with brown, furry deposits on the teeth, similar to the "dry distemper" or "brown mouth" described in the *Veterinary Journal* by Pugh. No other symptoms were shown, and at the end of about six weeks the Lakelands were normal. The cocker developed some dermatitis but at the sixth week-end showed slight inco-ordination of movement which steadily progressed to paralysis, finally including amaurosis. In view of the hopeless nature of the outlook, the animal was destroyed. He remained in good spirits and with a good appetite to the end—never a sign of ocular or nasal discharge or other symptom typical of distemper. The carcase was sent to Professor Dalling and report was now awaited. How, he asked, could one satisfactorily explain such an infection? All the dogs were together at the beginning, so presumably the infection was the same and yet three widely different courses were taken by four dogs, and two were dead. Treatment could not be shown to have had any good result and prognosis was mere guesswork.

Another case to which Mr. Hewetson referred was that of another red cocker dog, eight months old, which had fits and hysteria for a month—no other symptoms; these subsided for a fortnight and then overnight typical symptoms of distemper—pyrexia, nasal and ocular discharge, diarrhoea and bronchial catarrh—were manifested. This dog was destroyed after five days and the carcase was sent to Professor Dalling, but his report was not then to hand. A week after this dog commenced to show distemper symptoms, at intervals of one to two days, four dogs which had been in contact developed illnesses—(1) a cairn, four-and-a-half years old, given distemper serum at first sign of illness, was running a typical Pugh "brown mouth" course; (2) a red cocker dog, eight months old, immunised against distemper at four months, developed typical distemper; (3) a cocker dog, 18 months old, not immunised, ran a temperature and diarrhoea with no other symptoms, and (4) a cocker bitch, eight months old, also immunised, developed "brown mouth." What could one do with cases like these? he asked. Where was the value of distemper immunisation serum?

He was in complete agreement with the views so ably expressed by the President in his address on veterinary research, and he thought they should be emphasised to the research workers.

It was of far less importance to the owners of dogs that the veterinary surgeon should be able to give a scientific explanation of his

ignorance as a result of *post-mortem* examinations than that he should be able to do something to control the disease—prophylactically and curatively—while the animals were still alive. His experience of the use of the distemper serum when it was first introduced was excellent, given early, but latterly he had found it almost valueless, and if time permitted he could have given large numbers of cases to illustrate this.

The result was, he seldom used serum curatively now; it was too expensive to give on the apparently rare chance that a case might be uncomplicated virus distemper and he was becoming uneasy about recommending anti-distemper immunisation. He thought that the time was long overdue for the introduction into general use of vaccines, viruses and sera such as were issued in the United States of America, made not solely from pure virus, but including also the known complicating organisms.

Mr. A. J. Wright contributed to the discussion, saying that cases similar to those described by Mr. Hewetson had come to his notice.

Mr. Warwick Fowle said the best time to hear a veterinary surgeon eloquent was on a cold wintry morning about 3 a.m. when a 'phone message arrived for a country call to a calving cow that the veterinary surgeon knew from previous experience had been experimented on by the farmer-owner. Mr. Fowle now proceeded to compliment the President and congratulate the Association on his election. He referred to the President's father, Henry Sumner, whose acquaintance, he said, was a privilege and whose friendship was a pride, both of which in progressive stages he had known. The names of Locke and Sumner were permanent milestones in the profession and indelibly printed on the minds of the members of the Lancashire Veterinary Association, from its inception, and knowing Harry Sumner the son, as distinct from Henry Sumner the father, as intimately as he did, he was confident the traditions of the Association would, if anything, be enhanced during his year of office.

With regard to Mr. Hewetson's always pertinent and well-balanced remarks, Mr. Fowle, in spite of Professor Dalling's reports, maintained that the cases he (Mr. Hewetson) had described were undoubtedly cases of distemper, and he wondered if some of the older members remembered that at one time it was held that chorea never developed in a dog except as a sequel to distemper, and as far as his observations went, this was correct.

Mr. Hewetson, speaking again with the President's permission, said he felt a certain reluctance to disagree strongly with what had been said by a clinician of the ability and vast experience of Mr. Warwick Fowle, but he was convinced that Mr. Fowle was leading them back through the years and not forward. Because our fathers and grandfathers said that chorea never occurred except after distemper and that this and that were sure signs of distemper, it did not mean that they were right, and to accept their dictum to-day was to remain on the level of the dogmen and quacks. However much one lost faith in the use of biologics or felt that the distemper research had raised problems and difficulties greater than it had solved, nevertheless, some positive knowledge had been gained, but the work had stopped short at a very unsatisfactory point. What was needed was that clinicians should hold in mind the facts that had been established and from that point should work patiently on, presenting the research workers with the new problems as they arose. The research workers—as the President had said—should not pursue their work as pure science for the sake of science, but regard the practitioner's problems as their own, take each individual case on its own merits, and advise and assist in the course to take and on the collection of material—when, where and how—to help to bring individual cases to successful conclusions.

The data obtained from the cure of a number of similar cases, Mr. Hewetson continued, would be far more useful to veterinary science than a mere catalogue of organisms recovered from a variety of associated conditions. He believed that by these means it would eventually be possible, clinically, to differentiate symptoms produced by different organisms, to label them to the satisfaction of the lay owners and to treat them rationally and successfully to the credit of the profession.

Mr. Powley, continuing the discussion, drew the attention of the meeting to certain cases of haematuria in bovines, stating that a certain Yorkshire Dales farmer had lost an average of two to three cows each year over a number of years from haematuria of uncertain origin. The history was always the same in that the animals suddenly began with haematuria, the urine being of a dark chocolate colour. There was no loss in condition, the appetite was unimpaired, there was no straining and the animals appeared otherwise normal. After several weeks there were, of course, signs of anaemia, the visible mucous membranes appearing somewhat blanched.

Mr. Powley stated that he had the opportunity of examining two affected animals the previous month and of making a *post-mortem* examination of one dead from the condition. One of the affected animals was a cow carrying her fourth calf and had been passing urine containing blood since November, 1936. The other was a heifer due to calve in a fortnight and had been passing urine containing blood for a month. Both were in good condition.

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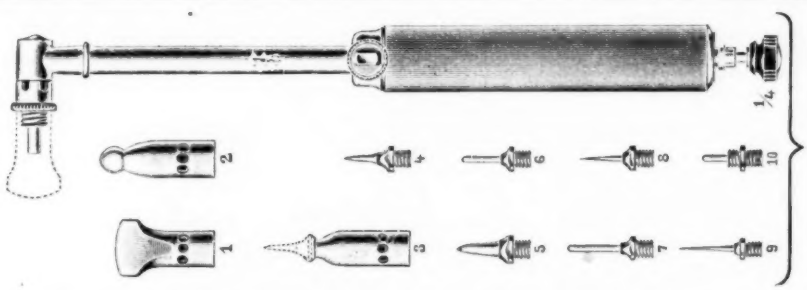

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eating normally, and showing blanched mucous membranes. Microscopic examination of blood smears from peripheral blood showed no piroplasms. Samples of urine were taken and centrifuged. The deposit thrown down, when examined under the microscope, consisted almost entirely of red blood corpuscles. The supernatant fluid was quite clear and contained practically no haemoglobin.

The only lesions found on *post-mortem* examination in the dead cow were confined to the bladder and were in the nature of small, irregularly-shaped, dark-coloured areas in the mucous membrane (none larger than a lentil). As the history and *post-mortem* findings appeared to rule out piroplasmosis, Mr. Powley suggested that the haematuria was due to direct haemorrhage from either the bladder or kidneys from a cause or causes unknown. As was usual in these Dales farms, the stock was housed at the onset of bad weather in the late autumn and fed on meadow hay grown on the farm, with a small ration of linseed cake. In this instance bracken was used as bedding.

Mr. Shawcross spoke on his experience of "red water" in cattle recently imported from Ireland, while Mr. T. Wilson also added to the discussion on "red water," relating his experience with cases in his district.

J. C. Baird, *Hon. Secretary.*

GRASS SICKNESS RESEARCH

It was announced at a recent meeting of the Diseases of Animals Committee of the Aberdeen County Council that about 2,000 horses are to be utilised in an extensive experiment to test a new vaccine which it is hoped may play an important part in the campaign against grass sickness.

Reference was made to this matter when the committee discussed the grant to be given to the Animal Diseases Research Association. The committee decided to recommend that the annual donation of £200 be renewed.

Information was forthcoming from Dr. Russell Greig, M.R.C.V.S., director of the Association, that a vaccine had been prepared from an organism which had been proved to be present in a proportion of acute cases of grass sickness during the several years' work in the field. The vaccine had been tested in a large number of experimental horses at Moredun Institute, Edinburgh, and so far had been found to be innocuous. It was hoped to make arrangements for the inoculation of about 1,000 horses in the field, leaving as unvaccinated controls an equal number of horses on each farm, and 945 horses had been vaccinated. The vaccination would be repeated at two fortnightly intervals.

It was stated that the horses on which the experiment would be made would remain on their owners' farms, a large proportion of them being on Aberdeenshire farms. During last year, which was a particularly bad year, between 1,200 and 1,500 horses were lost in Great Britain, the incidence of the disease being particularly high in Scotland.

In Parliament

Advisory Committee on Nutrition

In the House of Lords on Wednesday of last week, Viscount Astor drew attention to the report of the Advisory Committee on Nutrition to the Ministry of Health. He asked, in view of the recommendations of this committee, (*a*) whether the Ministry of Labour inquiry for the purpose of the cost of living index would include an inquiry into dietary surveys and, if so, how many families would be concerned in this inquiry, and what steps were being taken to ascertain the family incomes so as to correlate this inquiry with that proposed to be undertaken by the Registrar-General and an independent statistician; (*b*) whether steps had been taken by the Registrar-General to carry out this proposed inquiry into the constitution of families by age, sex, occupation, and locality, and into the distribution of family incomes; and (*c*) what local authorities in urban and rural areas respectively were conducting dietary surveys in England and Wales and in Scotland respectively, and about how many families would be covered in each country. The noble Viscount also moved for papers.

He said that malnutrition was due mainly to poverty. Ignorance had a bearing on it, but when full allowance was made for ignorance on the part of the housewife this was only a small contributory factor. By malnutrition he did not mean hunger or starvation but a degree of ill-health or sub-normality due to malnourishment, and in other cases bad physical development due to malnutrition in early youth. Malnutrition was very largely a problem of lack of purchasing power.

The Advisory Committee on Nutrition set up by the Minister of Health under the chairmanship of Lord Luke accepted as substantially correct certain conclusions arrived at by the Market Supply Committee. According to this committee 4,500,000 people in this country spent only 4s. a week on food, and roughly half the population were adequately or satisfactorily nourished. This meant that the other half of the people were inadequately and unsatisfactorily nourished. Lord Luke's committee accepted straight away the broad conclusion that this problem was really one of purchasing power. It could be said quite certainly that there was a problem of malnutrition affecting millions of people in this country, and, however necessary it might be to get further information on matters of detail, he thought that the facts already known justified immediate action on the part of the Government. This problem was closely related to agricultural policy.

By a wise long-term policy the Government could do a good deal to reduce the price of milk. He was convinced that over a long period of time such a reduction would be followed by a very considerable increase in consumption, and the Advisory Committee admitted that.

Lord Snell said there was something incongruous, at a time when we were undertaking great national rejoicings, that we had to confess that a large proportion of our population was actually underfed. The right procedure would be the feeding of the children and the mothers. Housing had its undoubted effect in better health, and he hoped that the Government would give the greatest possible attention to the various important questions affecting the nutrition and health of the people.

Lord Eltisley said that the Milk Marketing

Board had prevented the certain collapse of the milk industry.

Viscount Bledisloe said conditions had improved in the last 18 months, but malnutrition undoubtedly did exist in many areas, not so much, curiously, among the children as among the mothers, who sacrificed a great deal in the interests of their families. They were passing through a transition stage in connection with Government control, and his attitude would be either to have far less control or much more extensive and carefully planned control than what had so far been developed on the part of the Government.

He saw with some anxiety a suggestion that we should shut out the dairy products coming from New Zealand and other parts of the Empire. He earnestly hoped that the Government would be very careful before they yielded too much to pressure of this kind exercised by the over-anxious farmer. If we could get leading representatives of British and Dominion dairy farmers to meet officials of the Ministry of Agriculture and the Board of Trade, sitting round a table, we should more easily find a solution to this difficult problem than by working in watertight compartments.

Lord Denman said that there was a consensus of opinion that the price of milk was too high in this country. That high price was felt, not only by the working classes, but by the middle classes and hospitals and other institutions. It was felt particularly in the country districts.

Government Reply

Viscount Gage, Lord-in-Waiting, said that the average consumption per head of most foodstuffs had increased since the War, and with one exception there had been a general improvement in the national diet. The supply of energy-giving food given to the nation was more than was considered adequate by the League of Nations. The Government accepted the conclusions of the committee. There was not evidence of widespread malnutrition in the sense that it meant starvation.

Much more information was, however, desirable and the Government were prepared to collect it. What they had in mind was really a threefold inquiry. There was the Ministry of Labour inquiry in connection with the cost of living index figure. For this it was hoped to secure the weekly budgets of 10,000 families taken over four separate weeks in various parts of Great Britain.

It was proposed to check these results by another inquiry, called a qualitative dietary survey, of a much more detailed character. This was already in progress, and would eventually embrace 500 families, of which 200 might come from Scotland.

The next step after that would be to take out from the last census figures a definite proportion, say, 1 in 500 or 1 in 1,000, of the family census schedules. Those were expected to show, roughly, after certain allowances were made for altered conditions, the distribution of the population according to occupation. Those statistics would be then compared with the information in the possession of the Ministry of Labour with regard to the wage rates current in such occupations. It was hoped that the statisticians would be able, on this basis, to correlate the results of these various inquiries and present a working analysis of how the incomes of the various classes of the community were divided with special reference to food.

The motion was, by leave, withdrawn.

CONTRIBUTORY PENSIONS BILL

In our last issue we made reference to the eligibility of veterinary surgeons to participate in the scheme of voluntary insurance proposed in the Widows', Orphans', and Old Age Contributory Pensions (Voluntary Contributors) Bill, outlining its provisions. In the House of Commons on Thursday of last week this Bill, as amended in Standing Committee, was considered on Report, read the third time, and passed.

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The following questions and answers have been recorded in the House of Commons recently:—

Pig Breeding (Accredited Herds)

Colonel Ropner asked the Minister of Agriculture whether, in view of the increasing importance of health and disease in all branches of livestock breeding, he has examined the advisability of instituting a system of accredited herds for breeding pigs on the same basis as that adopted in Denmark?

Mr. W. S. Morrison: I assume my hon. and gallant Friend refers to the officially recognised breeding centres for pigs which have for a long time been established in Denmark. I have received no representations which indicate that there is any need for the introduction of this system into England and Wales, from which it would appear that, in this country, private pig breeders are able to meet the demand for pure-bred and healthy stock.

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Ministry of Agriculture (Organisation)

Mr. De la Bere asked the Minister of Agriculture whether, having regard to the increased demands made upon the Ministry of Agriculture, he is satisfied that the present organisation is adequate for the work of his Department; and whether it is proposed to modify or increase the organisation at the Ministry?

Mr. Ramsbotham: The very considerable additions to the work of the Ministry in recent years have, in fact, necessitated a number of changes in the organisation, and the position is kept constantly under review in order that the organisation may continue to be commensurate with the demands made upon the Department.

Mr. De la Bere: Will the Minister take steps to see that some of these splendid servants of the public who are with the Ministry are not in any way throttled and stifled in putting forward good schemes?

Mr. Ramsbotham: I would remind the hon. Member that he himself is causing additional strain on my right hon. Friend's Department.

Mr. Mander: May I ask whether it would be in order to congratulate the Government on the return of the hon. Gentleman to the fold?

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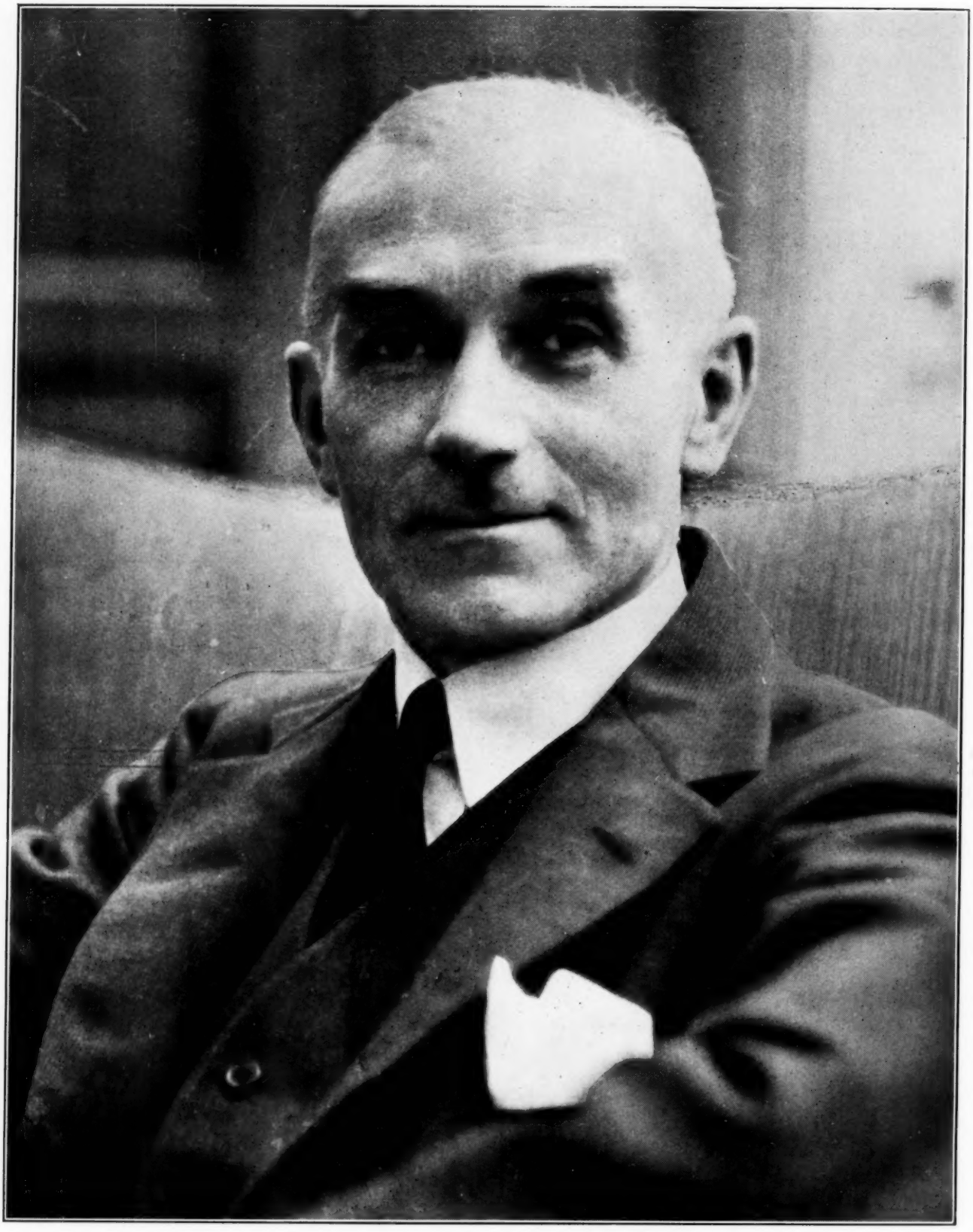
Livestock

Mr. De la Bere asked the Minister of Agriculture what steps he is taking to protect the interests of livestock breeders, in view of the proposal to open experimental slaughterhouses and to close existing slaughterhouses?

Mr. Ramsbotham: The purpose of Part V of the Livestock Industry Bill, under which it is proposed to offer facilities for three experiments in centralised slaughtering on the meat works principle, is to obtain information with regard to this method of dealing with livestock and the products of the slaughtering of livestock, under the conditions obtaining in this country. It does



SIR PERCY KELLAND, M.R.C.V.S.,
CHIEF VETERINARY OFFICER, MINISTRY OF AGRICULTURE AND FISHERIES

not appear to me that the interests of livestock producers will be detrimentally affected by these proposals, which are, indeed, designed to promote those interests.

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LIVESTOCK INDUSTRY BILL (OFFICIALS)

Mr. DE LA BERE asked the Minister of Agriculture what steps are being taken to prevent unnecessary addition to officials in connection with schemes for the Livestock Industry Bill?

The MINISTER OF PENSIONS (Mr. Ramsbotham): I have been asked to reply. The staff which will be required to enable the Livestock Commission to carry out their functions under the Livestock Industry Bill, if and when that Measure becomes law, will be determined by Ministers with the approval of the Treasury. The hon. Member may rest assured that no unnecessary staff will be appointed.

Mr. DE LA BERE: May I thank my hon. Friend for his reply and ask whether it is not a fact that it is an increase in livestock and not of officials that is required?

Mr. MESSER: Will an assurance be given that no members of the staff will lose their positions in consequence of the coming into force of this Measure?

Mr. RAMSBOTHAM: Perhaps the hon. Member will study the procedure under the Bill.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 20th.—R.C.V.S. Voting Papers issued.
May 21st.—Meeting of the Lancashire Division, N.V.M.A., at Liverpool.
May 24th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.
May 27th.—R.C.V.S. Voting Papers to be returned.
June 3rd.—R.C.V.S. Annual Meeting.
Victoria Veterinary Benevolent Fund Annual Meeting.
June 7th.—N.V.M.A. Committee Meetings, Royal (Dick) Veterinary College, Edinburgh.
June 8th.—N.V.M.A. Committee and Council Meetings, Royal (Dick) Veterinary College, Edinburgh.
June 10th.—D.V.S.M. Written Examination begins.
June 14th.—D.V.S.M. Oral and Practical Examination begins.
June 23rd.—R.C.V.S. Committee Meetings.
June 24th.—R.C.V.S. Committee Meetings.
June 25th.—R.C.V.S. Committee and Council Meetings.
July 5th.—R.C.V.S. Written Examinations.
July 6th.—R.C.V.S. Written Examinations.
July 8th.—R.C.V.S. Oral Examination begins.
July 26th-30th.—N.V.M.A. Congress at Bournemouth.

Personal

CORONATION HONOURS

Knighthoods for Mr. P. J. L. Kelland and Colonel Arthur Olver

The Coronation Honours List was published on Tuesday last, and their fellow members of the veterinary profession will have been most gratified to find that on the occasion of His Majesty's Coronation the honour of Knight Bachelor has been conferred upon two of their most worthy and distinguished confrères, Mr. Percy John Luxton Kelland, M.R.C.V.S., Chief Veterinary Officer, Ministry of Agriculture and Fisheries, and Colonel Arthur Olver, C.B., C.M.G., F.R.C.V.S., F.N.I., Royal Army Veterinary Corps (retired), Expert Adviser in Animal Husbandry to the Imperial Council of Agricultural Research.

SIR PERCY KELLAND, M.R.C.V.S.

Mr. P. J. L. Kelland succeeded Sir J. Ralph Jackson as Chief Veterinary Officer of the Ministry of Agriculture and Fisheries in August, 1932.

Qualifying as a member of the Royal College of Veterinary Surgeons in 1901, in that year he joined the Royal Army Veterinary Corps as Civil Veterinary Surgeon and proceeded to South Africa. On his return, in 1902, Mr. Kelland became associated with the Ministry of Agriculture in the capacity of Assistant Veterinary Inspector. There, in due course, his keenness and ability brought him to the fore, and in 1919 to him was allocated the important duty of acting as Secretary of the Foot-and-Mouth Disease Committee engaged on research on an isolated vessel off Harwich. Five years later saw him Chief Superintending Inspector, and in 1926 he became Deputy Chief Veterinary Officer, serving with the distinction which he has evidenced so outstandingly since, in 1932, he was promoted to the highest veterinary post in the Ministry.

A representative of Great Britain on the Permanent Commission of the International Veterinary Congresses, Sir Percy Kelland has a wide administrative and professional experience of all sections of work at the Ministry, both at Headquarters and in the field, and in all professional and agricultural circles, where he is well known and highly esteemed, news of his Knighthood will have been received with the greatest pleasure and satisfaction.

SIR ARTHUR OLVER, C.B., C.M.G., F.R.C.V.S.

Sir Arthur Olver, who was born in 1875, comes of fine yeoman stock, being the son of Mr. R. S. Olver, late of Trescowe, Bodmin, Cornwall, a prominent agriculturist and a County Alderman, who officiated as Director of the Show Yard for the Royal Agricultural Society of England. Two years after his

graduation in 1897, Arthur Olver entered the Army, serving during the South African War. He was Staff Officer to the late Sir Frederick Smith and worked with Sir Arnold Theiler at Daspoort after that campaign, for his services in which he was awarded the Queen's Medal with five clasps. Joining the Egyptian Army in 1906 he became P.V.O., Egyptian Army and Civil Service, and an outstanding feature of his career at this time was the fact that he initiated the present Civil Veterinary Service of the Sudan.

Returning to this country, Colonel Olver secured his Fellowship, in 1909, during the year in which, under the late Sir Frederick Smith, he officiated as Assistant Director of Veterinary Services at the War Office. October, 1914, saw him in France acting as Assistant Director of Veterinary Services under Sir John Moore. In July, 1917, Colonel Olver visited America as D.D.V.S. of the British Army Remount Commission. Recognition of his achievements during the Great War came first in 1916 with the award of the C.M.G. and later with that of the C.B., in 1919.

After further service in Egypt and in India he retired to take up his present appointment as Animal Husbandry Expert, Imperial Council of Agricultural Research, India. The importance of his sphere of work may be gauged from the fact that Sir Arthur advises on all veterinary matters in India, including the prosecution of veterinary research at Muktesar, the nutritional work carried on at Izatnagar, the sub-station of Muktesar and the activities of the Veterinary Colleges. Amongst his various schemes for the improvement of animal husbandry, with particular regard to the eradication of disease, Sir Arthur has already secured approval for the establishment of a Poultry Diseases Research Section with the Poultry Institute at Izatnagar, while his proposals for the future include the establishment of an "All-India" Veterinary College and of an institute for the study of genetics, improved measures for the marketing of stock and livestock products in conjunction with the staff of the Marketing Board and registration of the seven best dairy breeds of pure Indian cattle.

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Congratulations will also be extended to Mr. Frank Ware, F.R.C.V.S., Officiating Expert Adviser in Animal Husbandry to the Imperial Council of Agricultural Research, Director of the Imperial Veterinary Research Institute, Muktesar-Kumaun, India, in the conferment upon him of a Knight Commandership of the Order of the Indian Empire, and to Mr. Robert Daubney, M.Sc., M.R.C.V.S., Chief Veterinary Research Officer, Kenya, who receives the C.B.E. in the Civil Division of the Order of the British Empire.

Appointments.—Mr. W. T. Rowlands, M.R.C.V.S., D.V.S.M., has been appointed Veterinary Investigation Officer at the School of Agriculture, University College of North Wales, Bangor, in succession to Dr. Montgomerie. Mr. Rowlands is a native of Abergele where his father has been a veterinary practitioner for a long period of years. Mr. Rowlands was a student at the Royal Veterinary College and, after obtaining his D.V.S.M. at Manchester University, was appointed Assistant Veterinary Investigation Officer, at Bangor, in 1930. Since then he has been associated with Dr. Montgomerie in the work on sheep disease and other problems which has made the Department well known within the profession.

The East Sussex County Agricultural Committee have appointed Mr. J. Edwardson, M.R.C.V.S., as a veterinary inspector in succession to Mr. J. King Shaw, who resigned, together with the following additional veterinary inspectors, Mr. J. W. Pearce, M.A., B.Sc., M.R.C.V.S., and Mr. D. H. MacDonald, M.R.C.V.S.

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Dr. Ian Clunies Ross's Post in London.—"The recently cabled news of the appointment of Dr. Ian Clunies Ross as Australia's representative on the International Wool Publicity and Research Secretariat in London has been received with much satisfaction by those best able to estimate the importance of that post to Australian interests, together with his special qualifications for filling it," says the *British Australian and New Zealander*. He is at present, as he has been ever since its inception seven years ago, Officer-in-Charge of the Commonwealth's great Animal Health Laboratories, the McMaster Institute, where 30 research experts work under his direction.

"Dr. Clunies Ross, who is still some years short of 40, has invariably proved himself a brilliantly successful student, alike at his school, Newington College, Sydney, at the University of Sydney, and in various research centres since. At the University he elected to study for a degree in Veterinary Science. He graduated with honours and was awarded the Walter and Eliza Hall Travelling Fellowship, by means of which, in 1921-22, he was able to undertake post-graduate research work at the London School of Tropical Medicine and at Cambridge University. He also visited Vienna's research laboratories, and, later, returning to Australia *via* the United States, had the further advantage of studying American methods. He was appointed Parasitologist of the Council for Scientific and Industrial Research in 1926, and two years later secured his doctor's degree by a thesis on the control of hydatids in Australia.

"He has twice visited Japan; once, in 1929, under the auspices of the Council for Scientific and Industrial Research, to investigate methods adopted at the Institute of Infectious Diseases at Tokyo; and next, in 1935-36, at the request of the graziers' associations of Australia, to conduct a sheep and wool survey of North-Eastern Asia, when his itinerary included Mongolia, Manchuria and Korea, as well as Japan.

"The work which now lies before him is to endeavour to increase the world's use of wool in various directions by means of research, by the practical application of the results of technical investigations, and also by an intensive publicity campaign. For the first two, his specialised expert knowledge, coupled with sound judgment, mark him out as pre-eminently suitable: for the third, an attractive personality and great gifts as a public speaker will prove

valuable assets. Yet another qualification for a post on an international council he possesses in a high degree—the faculty of acquiring languages; he already has a good working knowledge of several, including, of course, Japanese."

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Retirement.—After practising at Monmouth for over 42 years, Mr. F. J. Tucker has retired owing to ill-health. For many years he was honorary veterinary surgeon to the show at Monmouth. He is a member of the Loyal Monmouth Lodge of Freemasons and was the Worshipful Master 43 years ago in 1894. He has been the Government inspector at Monmouth Cattle Market. "Many Monmouth friends wish him happiness in his retirement," says the *South Wales Argus.*

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On Leave.—The following veterinary officers in the Colonial Service arrived home on leave during the month of April:—Messrs. A. Fulton and S. Simpson (Gold Coast), and Captain R. W. M. Mettam (Veterinary Pathologist, Uganda).

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Mr. Morris G. Byerley, J.P., F.R.C.V.S., of Greenwich, was among the Aldermen of the Borough of Greenwich to be introduced to Their Majesties the King and Queen upon the occasion of the opening of the Royal Maritime Museum, on April 27th.

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R.C.V.S. OBITUARY

Gemmell, John Z., Thistle Bank, Bearsden, nr. Glasgow. Graduated Edinburgh, July 22nd, 1886. Died May 1st, 1937.

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LIVESTOCK INDUSTRY BILL

Power of Entry to Proposed Experimental Central Slaughterhouses

During the Committee Stage on this Bill the Minister of Agriculture promised to consider a suggestion that the power to enter slaughterhouses in the areas of a slaughterhouse scheme should be restricted. The N.V.M.A. thereupon made representations urging that if the Bill were so amended such a restriction should not be applied to veterinary officers and other members of the veterinary profession. The following reply to these representations has been received from the Minister's Private Secretary:—

Ministry of Agriculture and Fisheries,
10, Whitehall Place,
London, S.W.1.
May 1st, 1937.

Dear Sir,—I must express regret for the delay in replying to your letter of April 15th, regarding the Livestock Industry Bill. No doubt the matter to which you refer is the question which was raised in Standing Committee on a proposed amendment relating to the qualifications of persons authorised under paragraph (*i*) of Clause 24 to inspect slaughterhouses in the area of a slaughterhouse scheme. In this connection the Under-Secretary of State for Scotland promised to consider making it clear that only properly qualified persons should be authorised to undertake meat inspection under this paragraph (see *Official Report* of the Fifteenth Day's Proceedings of the Standing Committee, columns 619 and 620).

During that discussion, however, doubts were also expressed as to whether a provision enabling officers of the Commission to exercise the powers of a medical officer of health or sanitary inspector would not give rise to some confusion and overlapping between the functions of the Commission and the normal public health functions of the local authorities having jurisdiction over the area. The Minister has further considered the position in the light of that discussion, and has decided that in order to avoid possible difficulties it is on the whole desirable that the functions of the officers of the Commission under paragraph (*i*) of Clause 24 should be confined to those necessary for ensuring that the provisions of the slaughterhouse scheme (*e.g.*, in regard to the output of the slaughterhouse) are being complied with. It is not now proposed that these officers should be empowered to inspect carcases or meat with a view to the detection and condemnation of unsound articles of food, this duty being left in the hands of local authorities as under existing legislation. The Minister will, therefore, on the Report Stage of the Bill, move an amendment to delete the words from "slaughterhouse" in line 15 on page 23 to the end of the paragraph. The question of the qualification of officers of the Commission appointed for this purpose will, therefore, no longer arise.

No question has, however, arisen regarding powers of entry into any of the experimental central slaughterhouses as distinct from other slaughterhouses. So far as the Commission's functions are concerned, full provision would, of course, have to be made in the arrangements for management of the central slaughterhouse to enable any necessary access by the Commission's representatives. In regard to meat inspection the central slaughterhouse will be in precisely the same position as any other slaughterhouse. It should be borne in mind that whilst the public health aspect of the lay-out and conduct of a central slaughterhouse is bound to be given due consideration, questions of public health are not strictly within the scope of the Bill. It should also be observed that a scheme under Part V of the Bill can provide for the appointment of a special Advisory Committee, and an opportunity will, therefore, present itself for the Commission to obtain expert advice from veterinary surgeons if necessary. There is, moreover, nothing in the Bill which would prevent the Commission from arranging for the entry of a veterinary surgeon to a central slaughterhouse if they so desired.

Yours faithfully,
R. H. Franklin,
Private Secretary.

F. Knight, Esq.,
The National Veterinary Medical Association of Great Britain and Ireland,
36, Gordon Square, W.C.1.

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COMPULSORY PASTEURISATION FOR GLASGOW

On August 20th, 1936, the Corporation of Glasgow decided to apply for powers to require that raw milk distributed within the city should in certain circumstances be submitted to compulsory pasteurisation. In furtherance of this decision a report* has been drawn up by two

*"A Review of the Milk Supply of Glasgow in Relation to Pasteurisation." By Ian McCracken, M.A., B.Sc., M.B., D.P.H., and Andrew M. Stewart. Corporation of Glasgow, Public Health Department. 1937.

members of the Health Department giving details of the distribution and quality of the milk supply. "There is a great deal of valuable information in this report," states the *British Medical Journal*, in its issue of May 1st, and proceeds: "Of particular interest in relation to the proposed Bill is the present extent of heat treatment of the milk supply in Glasgow. An average daily quantity of 61,100 gallons is consumed in the homes. Of this, 5,600 gallons are sold under the official designation of 'pasteurised' milk, rather under 1,500 gallons as graded raw milks, and the remaining 54,000 gallons as ordinary milk. No less, however, than 85·4 per cent. of this ordinary milk is submitted to some form of heat treatment before delivery. Investigation shows that 36·5 per cent. is heated in plants of the holder type under licence, 25·9 per cent. in non-licensed holder plants, and a total of 23 per cent. in some other form of heating plant—retarder, flash, scalding or sterilising. Such a position must be regarded with mixed feelings. On the one hand, it is gratifying to learn that such a high proportion of the milk supply is submitted to some form of heat treatment; on the other hand, it is a matter of grave concern that such a relatively small proportion of the milk delivered to the public is under adequate official supervision. This situation, which is, of course, far worse in many other cities, must be changed. The scientific arguments in favour of pasteurisation are overwhelming. But if we are to press for compulsory pasteurisation we must insist that the quality of the initial supply, the heating process itself, and the subsequent care of the milk are under the most rigid official control. No one realising the extent of preventable milk-borne disease will do other than hope for the success of Glasgow's pioneering effort."

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HUMAN TUBERCULOSIS OF BOVINE ORIGIN

At the October meeting of the Office International d'Hygiène Publique representatives of Great Britain, Germany, and Holland submitted reports* on the incidence of human tuberculosis of bovine origin. The report from Germany, prepared by Professor L. Lange, gives a comprehensive survey of the investigations carried out in countries all over the world, and thus contains much information not accessible easily elsewhere. He concludes that there is no form of tuberculosis that may not be caused by the bovine bacillus. "The figures of incidence in various countries differ so greatly that international averages calculated from them would have only a limited value," comments the *British Medical Journal* of May 8th. "All that can be said is that three groups of countries can be differentiated: (1) those in which the bovine bacillus is relatively insignificant—*e.g.*, Japan, India, and perhaps Norway; (2) those in which there is an 'average' amount of human tuberculosis due to this bacillus—among them Germany and Switzerland; and (3) those in which this incidence is very high—England and Scotland. There is little doubt that there is a close connection between the incidence of the bovine type in human tuberculosis and the amount of tuberculosis in cattle in the same country. Nevertheless, though feeding is the most important factor, it does not, according to Professor Lange, explain entirely why there is so much human tuberculosis of bovine origin in England and Scotland while other countries are almost free from it. Sir Weldon Dalrymple-Champney's report, amplified by a note prepared by the Scottish Board of Health, summarises the now well-known investigations by Stanley Griffith, W. T. Munro, W. M. Cumming, and J. W. S. Blacklock, and the administrative measures that have so far been taken to reduce the incidence of disease with the bovine bacillus in man. Stress is laid on the 1936 Order in regard to the designations of milk, and to the importance of pasteurisation. In the light of Professor Lange's conclusions it appears, however, that if England is not to attain an unenviable position in this connection more energetic or perhaps different kinds of measures will have to be taken. It is helpful to note that country districts show a much higher incidence than towns; this is particularly striking in Scotland. Finally, the Dutch report contains results of the investigation of the sputum of adults in Amsterdam and South Holland, and of the gastric contents of children under treatment in sanatoria. Work was also carried out to compare the results obtained by different preliminary treatments of the gastric fluid and by culture and inoculation. It appears that for the bovine type the best results are obtained when the gastric contents are treated with soda rather than with acid, and when a Loewenstein medium is used which does not contain glycerin; guinea-pig inoculation, however, is still superior to culture."

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THE SHORTAGE OF VETERINARY SURGEONS

Commenting on the special educational number recently issued by a contemporary veterinary periodical, *The Lancet*, of May 1st, says:—"In this issue there are points of great interest not only to boys seeking a career and their parents or advisers, but to all practitioners of medicine, from their position as guardians of the public health. Here the two branches of medicine, the human and the veterinary, play individual and combined parts, and any shortage in the total number of the veterinary body may reflect seriously upon the joint efforts. For the diseases of animals which are communicable to man are far spread in their evil influences. In this country anthrax, glanders, and rabies are now fortunately rare if terrifying spectres. Their eradication is mainly due to the control exercised by the veterinary department of the Ministry of Agriculture and Fisheries over their respective sources of origin, bovine, equine and canine. It is to be hoped that we shall never again in this country have to fear these terrible menaces to man; but this security depends upon the continuance of the present keen veterinary inspection at each port where animals are allowed to land, as well as on quarantine laws and those governing the importation of animal products. Efforts directed towards prevention of the spread to humans of brucella infections and of foot-and-mouth disease must also be recalled. In the inspection of meat for human food the man who must by virtue of his training know most about the matter is the veterinary surgeon. He is the one best qualified to detect disease in the food animal before slaughter and to guarantee the soundness of the flesh when dressed for human consumption. And in the present fight against tuberculosis, which is an uppermost theme in every mind, the medical man works with the veterinarian; and only through such collaboration can measures of prevention be considered or a successful conclusion to endeavour be anticipated.

* *Bull. Off. Int. Hyg. pub.*, 1937, **29**, 317.

"Attention is drawn to the shortage of veterinary surgeons throughout the country and the difficulties which exist in obtaining the help of qualified assistants. This is to be attributed largely to the openings existing in the Colonies, and the recently formed Veterinary State Service, whose most urgent duty—the eradication of the tuberculous cow—absorbs many workers. It is necessary to bear constantly in mind the fact that every year between 2,500 and 3,000 deaths of children under five years of age are traceable to the drinking of tubercle-infected milk. If reliance is placed upon many published statements there are some million tuberculous cows in Great Britain and Ireland, while in many districts the dairy herds are infected to the extent of from 30 to even 60 per cent. As Lord Dawson reminded the House of Lords recently, in connection with the present need for pasteurisation of milk, the decline in mortality from bovine tuberculosis has not kept pace with that from the human form of infection. If an intensified effort to eradicate the tuberculous cow is a great task before the veterinarian we are reminded how varied and important are the other directions in which his services are required in the promotion and protection of public health. The shortage of qualified veterinary surgeons is, therefore, a matter of real concern. The young man entering the veterinary profession to-day will find that he has joined a service which is increasingly needed and valued; the whole world counts on his help. But the more this is so the more evident is it that the educational course must become increasingly comprehensive, and the tests to be satisfied grow harder. An extension of the curriculum has already been made, and university courses are running concurrently with those connected with the practising diploma, but the danger of discouraging candidates by insisting on too prolonged and arduous a course of study must be borne in mind. Students entering the veterinary profession now will command better material rewards than have been possible in the past, as there are almost limitless possibilities of promoting the welfare of the human as well as the animal kingdom."

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RESEARCH IN FOOT-AND-MOUTH DISEASE

During the past week there has been issued the fifth Progress Report of the committee, including distinguished veterinary and medical members, appointed by the Ministry in March, 1934, "to direct and conduct investigations into foot-and-mouth disease, either in this country or elsewhere, with a view of discovering means whereby the invasions of the disease may be rendered less harmful to agriculture."

This Report will shortly be reviewed in our columns. In the meantime, we reproduce the following from the announcement in connection therewith issued by the Ministry of Agriculture: "Difficulties encountered in dealing with a disease of this character are great, but the increasing mass of information acquired through the activities of the committee is of considerable value in the attempts made to keep outbreaks of the disease under control. The chief centre of research is the Experimental Station at Pirbright, Surrey, but work has also been carried out at the National Institute of Medical Research, the Lister Institute of Preventive Medicine, Manchester University, and the Oxford Bureau of Animal Population. The body of information accumulated relating to the disease covers the following more important factors.

"Washing soda and diluted caustic soda have been established as the most suitable and efficacious disinfectants. The size of the virus and its resistance to physical and chemical changes have been fully investigated. It has been shown that the virus particles are smaller than those of practically any other known virus, the diameter being estimated to be about one-hundred-thousandth part of a millimetre. Certain materials alleged to possess curative or preventive properties have been exhaustively tested, so far without discovering anything of real value. The committee's researches into immunity have shown that the resistance induced by an attack of the disease is very solid and far more durable than was formerly believed. This fact encourages the hope that an effective method of artificial immunisation may not be out of reach. Considerable difficulty besets this work on immunity as the research has demonstrated that several types of virus exist, each one of which can "break down" an immunity established against any of the others. The severity of attacks of all types is modified by such factors as age, sex, state of nutrition, and climatic conditions. Due attention has been paid to possible means of transmission of the disease by other animals in the field and experimentally. In particular small animals such as rats, mice, rabbits, moles, voles, ferrets and various species of birds have been carefully tested.

"The recent discovery of the great susceptibility of the hedgehog is a matter of great interest. It has provided the committee with an experimental animal which may prove of great value; and one, moreover, in which the disease is conveyed by contact between one animal and another in the same way as with ordinary farm stock. The committee feel justified in expressing the hope that its future researches will be greatly facilitated by this additional knowledge."

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MORE ABOUT VIRUS DISEASES

We reproduce below an annotation which appeared under the above heading in a recent issue of the *British Medical Journal*, showing as it does a possible relationship between an animal disease, *viz.*, distemper, and human infantile paralysis (poliomyelitis):—

"How profoundly filterable viruses differ from bacteria is only understood by those who take a more than ordinary interest in microbiology. It is not even certain that some of them are living entities. They are demonstrably particulate, but some are so small that the simplest organisation necessary for biological activities is almost inconceivable in such a compass. To call the virus of the Rous sarcoma a 'transmissible mutagen' did not carry matters much farther, but it was an ingenious expression, implying a belief that here was something of a nature fundamentally new. That the immunology of virus diseases also differs from that of bacterial infections, and that the multiplication of viruses appears only to occur within living cells, are other fundamental points of distinction. In this sphere so much is known, yet so much is still unknown, that to take stock occasionally and to speculate within reasonable limits is helpful. Two recent papers on these lines are well worthy of study. Goodpasture[1] reviews the phenomena of immunity in virus diseases, laying particular stress on an aspect which has only been fully appreciated within recent years—namely, the purely intracellular habitat and activities of viruses, and their entire insusceptibility once established there to the influence of

humoral antibodies. Antiviral serum is a magnificent prophylactic but worthless therapeutically for this reason. Goodpasture regards it as an axiom that killed virus cannot immunise, and suggests as an explanation for this that an immunising antigen is produced only during actual infection. On a much larger scale than this paper is Findlay's[2] review on variation in animal viruses; its scope may be gathered from the fact that it ends with a bibliography extending to 15 pages. The argument here is that variants develop in viruses as they do among bacteria, and for the same reasons, such as habituation to another species, with similar changes in antigenic constitution and in pathogenicity; thus viruses behave as other living entities. This is a weighty argument, capable of and receiving profuse illustration. It is perhaps more impressive when it deals with the phenomena of actual disease; serological methods seem sometimes to be carrying a greater weight in connection with virus diseases than true comprehension of their mechanism and meaning can bear. A short account has also just been published of some observations which bear on one interesting aspect of immunity to virus diseases. It is well known that most adults and older children have neutralising antibody for poliomyelitis virus in their blood and are consequently immune to this disease. It is by no means certain whether this immunity is acquired by a symptomless infection or produced in some other way. If the latter, other virus infections might conceivably protect against poliomyelitis, and evidence was forthcoming some years ago that vaccinia has this effect, the incidence of poliomyelitis in vaccinated children being found considerably less than in unvaccinated. Dalldorf, Douglass, and Robinson[3] now report that in monkeys suffering or recently recovered from experimental distemper inoculation with a poliomyelitis virus which is invariably fatal in control animals causes a mortality of only 33 per cent. The meaning of this result is not discussed, but one possibility at least appears to be that there is some antigenic relation between the two viruses. In view of the difficulties and dangers of attempted active immunisation against poliomyelitis, the possibility, perhaps foreshadowed in this observation, of securing protection by non-specific means would be very welcome."

[1] *Amer. J. Pub. Hlth.* (1936.) **26**. 1163.
[2] *J. Roy. Microscop. Soc.* (1936.) **56**. 213.
[3] *Science.* (1937.) **85**. 184.

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LEGAL NOTES

Sheep Scab Offence: £80 *Fine.*—A fine of £80 was imposed at Glasgow Justice of the Peace Court on a Braemar sheep farmer for a contravention of the Sheep Scab Order. Defendant admitted a charge of having, between February 10th and March 16th, at Johnston Farm, Gartcosh, had in his possession or under his care 91 sheep affected with, or suspected of being affected with, sheep scab, and failed to notify the authorities.

Mr. E. M. Galloway, the Procurator-Fiscal, said the complaint was made at the instance of the County Council of Lanark and the Ministry of Agriculture. It was a bad case, and accused was liable to a fine of £5 in respect of each sheep—a total of £455.

For the defence, an agent said the sheep had been brought from various parts of the country to graze at Gartcosh for the winter.

A Highly Strung Mare: *Failure of Action for Breach of Warranty.*—Thirty-one witnesses were called in an alleged breach of warranty case arising out of the sale of a mare, which was concluded at Wellington County Court on April 29th. The evidence had been heard by Judge E. H. C. Wethered, at Taunton County Court, on two previous days.

Mr. Thomas Trebble Westcott, of Hollam Farm, Bridgetown, Dulverton, sought to recover, as damages for alleged breach of warranty on the sale of a mare, £25 1s. 3d. from Mr. Percy John Bishop, of Lyngford Farm, Taunton, and formerly of Chapman's Farm, Treborough.

The case for the plaintiff was that the horse was warranted when sold by Bishop, as "good in all gears, active and quiet, right and straight in every way, but that it afterwards proved a "jibber" and a kicker.

Mr. F. W. Willmott, Taunton, represented plaintiff, and Mr. R. J. McGahey, Exeter, appeared for defendant.

Mr. Willmott said that plaintiff, a young man starting farming, wanted a mare for farm work. On Sunday, September 20th, he went to Chapman's Farm to see some horses which Bishop was selling. Bishop was leaving the district. The mare in question was described by Bishop as "six years old, quiet, and will go in chains and shafts." Bishop also said he had bred the horse, and that it would go anywhere. Relying on what defendant had said, Westcott attended the auction sale and he bought the mare for 43 guineas. His case was that the horse was not in accordance with the warranty. It was sold as a good worker in all gears, but proved to be a "jibber" and a kicker.

Plaintiff said the mare stopped when going up hill, kicked and "lifted" in shafts, and was dangerous. He afterwards turned the horse loose in a field, and did not use it, being advised by a veterinary surgeon that it was not safe to do so. He sold the mare at an Exeter repository for 25 guineas, less charges.

In reply to Mr. McGahey, plaintiff denied that the trouble with the mare was caused by his own mismanagement or ill-treatment of the horse.

Evidence in support of the plaintiff's claim was given by Major John Rankin, T.D., M.R.C.V.S., Minehead, and Mr. T. L. Whitby, *M.C.*, M.R.C.V.S., of Taunton. Major Rankin stated that the horse was not normal, and that her kicking habits and general bad behaviour were probably due to a certain disease.

Mr. McGahey said he would call several people who worked the mare before the sale at Chapman's Farm, and they would tell His Honour that it never showed the slightest sign of any vice, unwillingness to work, or of jibbing. Defendant sold the mare because he was taking over a fully-stocked farm. Mr. Bennet, a horse dealer, who afterwards bought the mare at Exeter, gave it a good character, and defendant, desiring the services of another horse on his new farm, bought it back for £35. It had been worked in all sorts of conditions, and had given no trouble. What other conclusion could one come to but that the mare was not properly managed when it was owned by the plaintiff? If, when plaintiff purchased it, it had the disease referred to, which was latent, and the effect of it after the sale was to make the mare a kicker, that, Mr. McGahey submitted, did not constitute a breach of the warranty given by the defendant.

In reply to His Honour, Mr. McGahey submitted that the warranty was one of behaviour and not of soundness.

Mr. Edward B. D. Hall, M.R.C.V.S., of Wivelis-

combe, said he saw the mare in 1934 and 1935, and it showed no sign of vice nor of the disease mentioned. Witness saw it working quietly and well on April 1st.

At the resumed hearing, Dr. William M. Scott, of Bridgwater, said he examined the mare without the use of an anaesthetic on April 20th. He found no trace of the disease which Major John Rankin had suspected, from symptoms displayed by the animal. Its condition was perfectly normal.

Mr. McGahey submitted that if there was any "misbehaviour" by the mare while it was in the possession of the plaintiff, it was due to mismanagement, which upset the temper of the animal.

Mr. Willmott said the evidence of credible witnesses was that the mare was treated kindly while in the possession of the plaintiff. The onus of proof of bad management was on the defendant. He submitted that the plaintiff was entitled to succeed.

His Honour, giving judgment for Mr. Bishop, with costs, said he accepted the evidence of Dr. Scott that the mare was a good worker, but highly temperamental. Mares were sometimes subject to a natural disturbance of a physiological character, and required to be handled very carefully. He thought the trouble had arisen not necessarily from ill-treatment, but by the mishandling, by strangers, of an animal that was highly strung. He did not think there had been any breach of the warranty.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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TESTING UNDER THE MILK (SPECIAL DESIGNATIONS) ORDER, 1936

To the Editor of the Veterinary Record

Sir,—The whole profession will have read (or will read) with great interest the correspondence published in yesterday's *Record*, regarding a farmer's right to nominate the veterinary surgeon to carry out the clinical examinations and tuberculin tests required by the Milk (Special Designations) Order, 1936.

Messrs. H. Phillips and Sons, of Hereford, and their veterinary adviser, Mr. ———, M.R.C.V.S., D.V.H., of ———, deserve to be complimented on their firmness in maintaining what they believe to be right and the force and clarity which mark the statement of their case.

Nothing has done more to foster a sense of grievance among veterinary practitioners than the action of some local authorities in excluding them from the working of the Milk (Special Designations) Order; and the decision of the Minister of Health that this policy of exclusion has no legal justification in England will have a correspondingly healthy effect on the profession. Not only practitioners will be gratified—I am sure that many whole-time officers also will welcome the decision as conducing to that unity in our ranks which is so desirable.

To mitigate our satisfaction just a little, it has to be recorded that this does not affect the position in Scotland. The English order provides that examinations and tuberculin tests are to be carried out by veterinary surgeons "nominated or approved" by the licensing authority. The words, "or approved," indicate that the licensing authority need not of necessity "nominate." But if they do not "nominate," somebody else must do it, or there will be no one to be "approved," and that somebody in a normal case will be the farmer.

The difference in the Scottish order is that the vital words "or approved" do not occur. In the uncompromising Scottish way the order lays it down that the prescribed examination and tuberculin test will be carried out by "a veterinary surgeon nominated by the local authority": and they, in a normal case, will nominate the members of their own whole-time staff, and nobody else.

I am not at the moment suggesting any action to be taken, but merely drawing attention to this essential difference between the English and the Scottish orders.

I am,
Yours faithfully,
Donald Campbell.

Rutherglen.
May 9th, 1937.

Council Election, R.C.V.S.

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—As a candidate for re-election to the Council of the R.C.V.S., I am grateful for this opportunity to request the support of the members of the profession.

To assure proportional representation on the Council, I believe that this should be both qualitative and territorial: the former enables the expression of views in the Council of the needs of the various elements in the profession, and the latter that representation is not confined to a limited geographical area.

There are obvious difficulties in securing proportional representation in those parts of the country which are situated a considerable distance from London, as the time and expense involved in attending meetings present a real disability to a large number of members, so placed.

There are reasons for believing that our profession is on the threshold of considerable changes—for good, or ill: it is much too small and numerically weak to be divided by internal discord and strife, and a great responsibility is placed upon the Councils of both the R.C.V.S. and N.V.M.A. to see that the profession gets a square deal, and that its various component elements each receive the most careful and unbiased consideration, so that not only the profession, but the State, and community at large may receive the maximum benefits of our aggregate skill and knowledge.

For a profession so small, and containing so many varied, diverse, and often apparently conflicting interests, it would be impossible to contrive a more appropriate motto than that borne on the College coat of arms: if every member of the profession attempts to live up to it as his family motto, the future welfare of the profession is assured.

A. B. Mattinson.

Friars House,
Bamber Bridge,
Preston.
May, 1937.

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—Four years having elapsed since you last honoured me by electing me to your Council, I again offer myself for election after 16 years' service.

During that time my activities on the Councils of the National Veterinary Medical Association, and Royal College of Veterinary Surgeons, have been before you, and you will have had the opportunity of forming an opinion as to my fitness or otherwise for being one of your representatives.

At the present time I hold the offices of your Treasurer (to which I was elected in 1931), Vice-President, and President-elect, but before occupying the Presidential Chair I have to seek your suffrage.

My 16 years' experience has taught me the folly of making Utopian promises, but this I do say, that if elected I will endeavour to bring an unbiased opinion on the varied matters that come before the Council, and at all times do my utmost to uphold the rights and dignity of the profession.

I ask, therefore, for your votes at the forthcoming election.

P. J. Simpson, F.R.C.V.S.

Maidenhead.

May, 1937.

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To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—At the end of my first period of service as a member of Council, R.C.V.S., I offer myself for re-election. My activities as a Councillor have strengthened my conviction that my long experience in general practice and the knowledge of public health duties derived from my present appointments enable me usefully to represent you.

Having spent most of my life in private practice I have the interests of the general practitioner at heart, and as a member of the Finance and Parliamentary Committees, and also Registration Committee of the Royal College, and of the Council and three committees of the N.V.M.A. I have devoted at appreciable personal expense my time to advancing the interests of the veterinary profession generally and those of my late colleagues in practice, in particular. Whenever possible I have attended the meetings of the governing body and its committees.

The insight which I have gained into the working of the Veterinary Public Health Services has proved to me the importance of the official recognition of the practising veterinary surgeon. I was instrumental in getting through the committee stage the proposal for a Bureau of Animal Health under State control, the principle of which eventually secured acceptance by the N.V.M.A., and in which scheme I wish to see the general practitioner permanently embodied.

If you honour me once again with your confidence, I shall continue to devote myself whole-heartedly to the work of the Council and to do all that lies in my power to further the best interests of the profession as a whole. I hope, then, that I may count on your vote at the forthcoming election to Council, R.C.V.S.

W. K. Townson, M.R.C.V.S.

"Brackley,"
Park Crescent,
Peterborough,
May, 1937.

To the Fellows and Members of the Royal College of Veterinary Surgeons:

Ladies and Gentlemen,—I ask for your vote at the coming election for the Council of the R.C.V.S.

Our profession has greater demands made upon it.

Our services are more appreciated.

Our knowledge is increasing, and it is to be in a position to meet the present and future requirements that I am prepared to give my earnest endeavour to assist.

Until satisfactory and acceptable schemes for the ultimate eradication of tuberculosis, contagious abortion, mastitis and Johne's disease are promulgated, I am firmly convinced our services as veterinarians will occupy a subordinate position, and our general work continue to be too severely handicapped.

The private practitioner, I am also convinced, is the key point to this major end, and with the closest co-operation between veterinary practitioner and veterinary administrator, local and State (we can stand on our own feet), more rapid progress should be made.

In small-animal practice, stronger action should be pressed to protect the public and ourselves from certain public bodies and private individuals.

The maintenance and improvement of our status and prosperity is my earnest desire.

G. C. Webster,
Private Practitioner.

11, King Street,
Lancaster.

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Royal College of Veterinary Surgeons
Election of Council, 1937

The Lancashire, North of England and Yorkshire Divisions of the N.V.M.A. unite in requesting the interest of all Members and Fellows of the Royal College of Veterinary Surgeons in the above election. In the exercise of their professional franchise, they respectfully solicit that one of the eight available votes be given to each of the following gentlemen who are the official candidates of their respective divisions.

A. B. Mattinson, F.R.C.V.S., D.V.S.M., M.A.
G. C. Webster, M.R.C.V.S., D.V.S.M.

Lancashire Division.
Signed: H. Sumner, *President.*
J. C. Baird, *Hon. Secretary.*

North of England Division.
Signed: J. J. McDowall, *President.*
W. Lyle Stewart, *Hon. Secretary.*

Yorkshire Division.
Signed: D. S. Rabagliati, *President.*
E. F. McCleery, *Hon. Secretary.*

The Editor acknowledges, with thanks, the receipt of the following:—

Communications from Messrs. C. Elphicke (Bedford), C. G. Hopson (Golders Green) and J. M. Murphy (Dublin).

Report for the year 1936 of the Chief Veterinary Officer, Cheshire.

Report for the year ending March, 1935, of the Veterinary Service of the Department of Agriculture and Forests, Palestine.

Report of the Southern Rhodesia Trypanosomiasis Committee and Bureau.

Report of meeting of the Mid-West Division, N.V.M.A., from Mr. C. E. Perry, Hon. Secretary.